King's Bay 2004 Section 103 Sediment Characterization

Prepared for

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Executive Summary

A maintenance-dredging project has been proposed for King's Bay located near the City of Fernandina, Nassau County, Florida. The project consists of the entrance channel from the St. Mary's River eastward from Zone 1/Cut 1 (Station 100+00) to Zone 8/Cut 1 (Station 340+00). The existing project is authorized for depths of 46 feet, plus 3 feet required advance dredging, and 2 feet of allowable over-depth. Before ocean disposal of dredged sediments could occur, channel sediments were tested and compared to the reference sediments to determine if they contained elevated concentrations of potentially toxic chemicals.

This report presents field data and test results from sediment collection activities that occurred in December 2004. The purpose of this sampling effort was to provide information required by decision makers for the evaluation of sediment disposal options, including placement in the Fernandina Ocean Dredged Material Disposal Site (ODMDS).

Prior to initiating fieldwork, a Sampling Plan and Protocol was developed by the US Army Corps of Engineers, Jacksonville District, and approved by EPA Region IV. The sampling and laboratory test procedures used followed those specified in the Sampling Plan and Protocol.

The eight composited channel zone samples, including a field duplicate and a reference composite sample were tested for metals, pesticides, PCB Aroclors, PCB congeners, PAHs, total ammonia, cyanide, oil and grease, total organic carbon, total sulfide, total organic tin, specific gravity, grain size, Atterburg limits, settling rates, and total solids.

Most of the detection limits were met or were lower than those specified by the Sampling Plan and Protocol submitted to PPB Environmental Services by the US Army Corps of Engineers.

Review of the field data and sample collection process and laboratory data and quality assurance reports show that all data are usable for project purposes of this Section 103 pre-dredging sediment evaluation.

Sediment and Elutriate Chemistry Comparison

Sediments

The reference sediment was found to contain similar grain size content as the western most composited channel zone samples. The eastern composite zone samples were of much greater silt/clay content.

Antimony and silver were not detected in the sediment samples. Mercury was detected in one zone sample slightly above the requested Sampling Plan and Protocol's detection limit. Aluminum and iron were detected in all sediment samples in varying concentrations. Cadmium was detected in trace amounts from three zones, which were collected in the eastern most zones of the entrance channel. Arsenic, copper, lead and nickel were found in all sediments in various concentrations. Chromium and zinc were reported in all sediment samples in elevated concentrations. Metals results from the eastern most zones tended to be higher in concentration when compared to the other zone samples, and the reference sample, throughout the project.

Pesticides were not detected in the zone sediment samples or the offshore reference sediment.

Only one elevated PCB aroclor was detected in the sediment samples.

PCB congener 206 was detected in three zone sediment samples, but in trace amounts.

PAHs were not detected in the zone sediment samples or the reference sediment.

No organotin compounds were found in the zone sediment samples or the reference sediment.

All sediments had detectable values of ammonia, including the offshore reference sediment.

Sulfide was detected in six of the eight zone sediments. The reference sediment yielded sulfide.

No cyanide was detected in the sediment samples.

Oil and grease was not detected in the reference sediment. Three of the eight zone sediments had slightly elevated oil and grease results.

Elutriates

The channel zone sediment samples and the reference sediment were subjected to standard elutriation testing, using site water collected from the King's Bay area.

Antimony, cadmium, chromium, copper, lead, mercury, and silver were not detected in the elutriated samples including the background water.

Arsenic, nickel, and zinc were found in all of the elutriate samples and background water sample.

Pesticides, PCB Aroclors and PCB congeners were not detected above the Sampling Plan and Protocol's requested detection limits.

PAH compounds and organotin compounds were not detected in the elutriate samples or the background water sample.

Oil and grease was not detected in the elutriates and background water sample.

Concentrations of total organic carbon was found in the elutriate and background water samples.

Ammonia was not detected in the background water sample or in zone elutriate sample E-KB04-1. The remaining samples had detectable ammonia concentrations.

Cyanide was detected in low concentrations in the samples.

Sulfide was not detected in the reference elutriate or the background water sample, however, sulfide was found in the zone elutriates.

ADDAMS Modeling

STFATE

In progress…

1 Introduction

This report presents information regarding sediment proposed for dredging from King's Bay. The area was evaluated for 103 certification in accordance with the 1991 "Green Book" ("Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual"). This evaluation included chemical analysis of sediments, waters, and elutriates - including physical testing of sediments.

The current ocean disposal evaluation of King's Bay considered potential dredge material from the entrance channel to the St. Mary's River. The project provides access to marine traffic using terminal facilities located in the Cities of: Fernandina, Florida, St. Mary's, Georgia, and naval vessels using facilities at the King's Bay Naval Station. Potential dredged material from the channel is planned for beach, near shore and ocean placement.

Figure 1. King's Bay Sampling Locations for the Evaluation of Dredged Material for Ocean Disposal [from West (E-KB04-1) to East (E-KB04-8)]

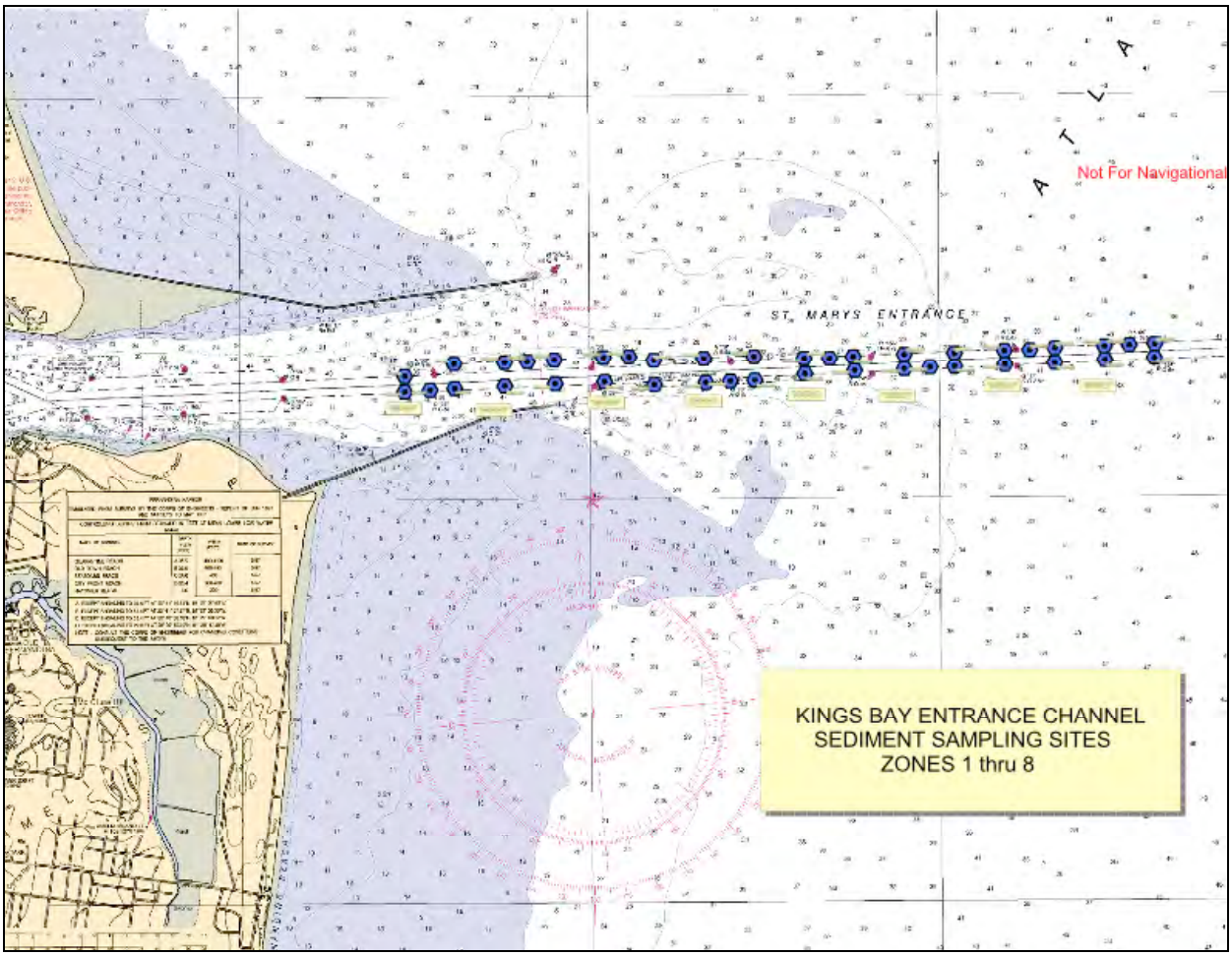
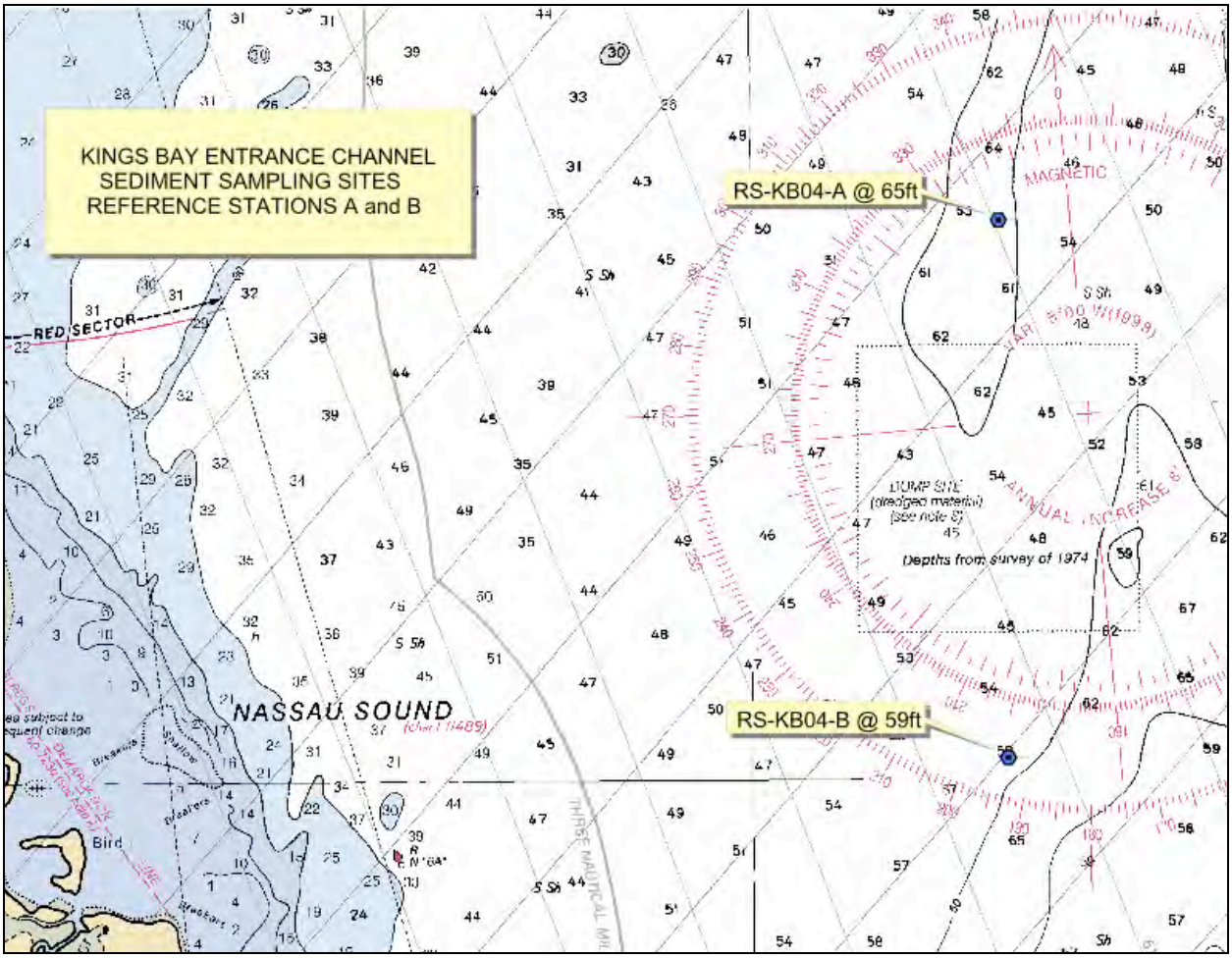


Figure 2. Fernandina Ocean Dredged Material Disposal Site (ODMDS) Sampling Locations for Evaluation of Dredged Material for Ocean Disposal



2 Materials and Methods

Before sampling procedures could be determined, the USACE Jacksonville District developed a list of chemical constituents and physical parameters of interest. A Tier I investigation was performed to identify site specific chemicals of interest and these were merged with the list of chemical analytes and physical parameters suggested in the Regional Implementation Manual (USACE and USEPA 1992). The final list includes regulated as well as other common, unregulated contaminants.

After identifying the chemicals and physical parameters of interest, a sampling plan was developed and approved by EPA Region IV. To reference this document, "King's Bay 103 Evaluation – 2004 Sampling Plan and Protocol" see Appendix A.

2.1 Physical Parameters and Chemicals of Interest

The following physical parameters, chemical constituents, and analytical groups were identified as important for this project. Analytical methods are presented in Table 2.

PHYSICAL PARAMETERS
Grain Size Distribution
Percent Solids
Specific Gravity
Atterburg Limits
Settling Rates

CHEMICALS OF INTEREST
Metals

Aluminum (sediment only)	Iron (sediment only)
Antimony	Lead
Arsenic	Mercury
Cadmium	Nickel
Chromium	Silver
Copper	Zinc

Total Ammonia
Total Organic Carbon (TOC)
Cyanide
Oil and Grease
Total Sulfide
Chlorinated Hydrocarbon Pesticides
Polychlorinated Biphenyls (PCBs) Aroclors and Congeners
Polynuclear Aromatic Hydrocarbons (PAHs)
Total Organic Tin

2.2 Field Methods and Procedures

Field procedures for sample and in-situ data collection are described in detail in Appendix C. Chain of Custodies appear in Appendix B. The following text summarizes the methods and procedures used.

2.2.1 Field Equipment

CSA personnel transported field-sampling equipment to the Fernandina Beach area using containers that protected the items from damage. To the extent practical, critical items were duplicated so that failure of any one item would not stop the fieldwork. Similarly, spare parts and replacement items were included to prevent avoidable down time. When practical, sampling equipment was pre-cleaned before transport to the field. PPB Environmental Laboratories supplied and transported all sample containers. The integrity of all containers was maintained during shipment to and from the King's Bay area and while in storage awaiting use.

2.2.2 Decontamination and Clean Area Procedures

All equipment surfaces with the potential to contact sample material, such as stainless steel spoons and bowls, were decontaminated using a de-ionized water/Liqui-nox® solution, followed by a tap water rinse, de-ionized water rinse, isopropanol rinse, and then air-dried. If not immediately used after cleaning, decontaminated equipment was wrapped in food-grade aluminum foil with the shiny side contacting the equipment.

Field personnel wore Nitrile gloves that were non-powdered, talc- and phthalate-free, and were changed between sampling stations and when decontaminating equipment. Gloves were changed when torn or possibly contaminated.

The deck area where sampling occurred was scrubbed with a dilute Liqui-nox® solution to remove petroleum residues, loose debris, and any other materials that might contaminate collected sediment.

Care was taken to prevent wash water that potentially contained oil or petroleum compounds from entering the surface water. Sediment debris was removed from the sample collection area before departing each station.

Hydraulic and petroleum-fueled equipment were maintained in an area away from the vibracoring or grab sampling area, and any drips or leaks of hydraulic fluids, fuels, or lubricants were cleaned up immediately. Gasoline and diesel fueled equipment was positioned downwind to minimize the potential for sample contamination.

2.2.3 Sediment Sample Collection and Handling

All samples were collected using appropriately cleaned, non-contaminating equipment (e.g., constructed of stainless steel or coated with Teflon®) as required for the analyses of interest.

After collecting sediment in the Van Veen grab sampler, the sampling devise was withdrawn from the sediment and placed over a Teflon® coated stainless steel collection vessel where the sediment was released. The sediment was placed into pre-cleaned and pre-labeled one-gallon glass sample containers using stainless steel spoons and stainless steel funnels. The volume of sediment was recorded on the chain of custody to ensure that there would be sufficient volume for generating the composited sample.

Reference sediment samples, A and B, were collected using a stainless steel box corer. Collected sediments were placed into a stainless steel vessel with a protective coating of Teflon®. Excess water was decanted before transferring the sample into the laboratory supplied pre-cleaned and pre-labeled one-gallon glass sample containers.

After containerizing, all sediment and water samples were immediately placed on ice in Rubbermaid® coolers.

PPB technicians delivered the samples to PPB's Gainesville, Florida laboratory in ice chests, which were chilled with ice and maintained at approximately four degrees Celsius. Custody seals were secured to each ice chest in a manner to disclose if the ice chest had been opened before delivery to the laboratory. There was no evidence of tampering of the samples upon arrival at PPB Laboratories.

PPB laboratory personnel received all sample containers in good condition.

2.2.4 Site Water Collection and Handling

Site water used in elutriate generation for chemistry, was collected directly into pre-cleaned one-gallon amber glass containers with Teflon® lid-liners. Sample containers were inverted and submerged at least 0.5 feet below the water surface before they were turned upright and allowed to fill. Water sample containers were placed in ice chests with wet ice and transported to PPB in a manner similar to the sediment samples. The site water was collected from a central location in the King's Bay area.

2.2.5 Hydrographic Measurements

Collection of sediment and water from King's Bay and the reference stations included the following general ancillary observations and hydrographic measurements made on water from mid-depth, or, for the reference stations, near the water surface:

Sea State	Water Temperature	Dissolved Oxygen
Tidal Cycle	Water Depth	Turbidity
pH	Conductivity	Salinity
Sampling Depth	Weather Conditions	

2.3 Physical and Chemical Laboratory Methods and Procedures

Analytical procedures followed those prescribed in the document "King's Bay 103 Evaluation – 2004 Sampling Plan and Protocol" and in the "Green Book" ("Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual"). Target detection limits were defined to meet EPA Region IV guidelines.

3 Locations of Sampling Areas

The proposed disposal site, the Fernandina ODMDS, is located approximately 13 miles from the King's Bay entrance channel to the north side of the disposal site, and 14 miles to its center. The site is two nautical miles square, and is in water that averages 62 feet deep. Using the NAD 83 datum, the approximate corners of the ODMDS are located at:

Northwest Corner:	30°33.0053' lat; 81°19.1326' long
Northeast Corner:	30°32.9989' lat; 81°16.8667' long
Southwest Corner:	30°31.0003' lat; 81°19.1349 long
Southeast Corner:	30°31.0027' lat; 81°16.8645 long

Eight zones were selected from the existing channel areas for maintenance dredging. Each zone was divided into five sub-zone sampling stations. The sub-zone sampling locations within the entrance channel area are shown in Figure 1.

Two reference stations were sampled from water 59 to 65 feet deep, approximately one nautical mile north and one nautical mile south, respectively, of the northern and southern edges of the ODMDS. The reference locations sampled appear on Figure 2.

Positioning of the sampling equipment at the predetermined sampling stations was accomplished using a Magnavox Model 412 DGPS receiver coupled with a Starlink Model MRB-2A beacon receiver. Differential corrections were acquired using the Coast Guard beacon from Cape Canaveral, Florida from which real-time GPS differential corrections are broadcast at 295 KHz. This system has a proven accuracy of ±5 m (1 m to 3 m is typical) because of the high quality of the GPS and beacon receivers and the use of an "H-field" antenna.

Table 1 lists the coordinates for the reference and the channel sample locations. This table also includes the method of sampling (i.e. Vibracore or Van Veen grab).

Copies of completed field sheets developed for this sampling effort appear in Appendix D.

4 Description of Testing Approach

Selecting eight sampling zones throughout the entrance channel was believed adequate to provide a representative set of samples. Within each zone, five sub-zone sampling stations were picked but with consideration to sediment types and areas near point source discharges, or areas likely to be affected by non-point source discharges. Also considered were the influence of currents and geographical variations. Areas of distribution of the sub-zone sampling stations are described in the document "King's Bay 103 Evaluation - 2004 sampling Plan and Protocol" under section "Sample Plan Design". This document can be referenced in Appendix A.

Two reference station locations were selected for generating a composite sample by combining equal proportions from each station. Coordinates are recorded on the field sampling data sheets in Appendix D and can be referenced on Table 1.

The eight composited sediment zone samples, including the field duplicate and the reference composite sample were tested for metals, pesticides, PCB Aroclors, PCB congeners, PAHs, total ammonia, cyanide, oil and grease, total organic carbon, total sulfide, total organic tin, specific gravity, grain size, Atterburg limits, settling rates, and total solids.

Elutriate samples were generated from the eight zone samples, including the field duplicate and the reference composite sample, and were tested for metals, pesticides, PCB Aroclors, PCB congeners, PAHs, total ammonia, cyanide, oil and grease, total organic carbon, total sulfide and total organic tin.

5 Final Results

Prior to the initiation of fieldwork, preprinted field sheets were designed specifically for this project. Completed field documentation appears in Appendix D. All laboratory reports of analyses for the King's Bay channel sediments, elutriates and background water sample, including the reference composite sediment and elutriate results appear in Appendix F.

5.1 Field Measurement Data and Sediment Descriptions

The weather during the field effort was generally overcast with 10 to 15 knot winds from the south/south west, and the sea state was 2-3 feet and choppy. Tidal height ranged from 1 to 2 feet above mean low water during the sampling period. Appendix C presents the water quality data measured at mid-depth for each sub-zone station and near the surface for the reference stations.

All samples, including the offshore reference samples were collected using a stainless steel Van Veen grab sampler.

A vibracore sampler was not used for this sampling effort due to the sampling depths being outside of the vibracore's depth capability compounded by poor weather conditions (i.e. high wind velocity).

5.2 Sediment Physical and Organic Carbon Data

Sediment samples from the composited zone stations and the composited reference station were sieved to determined grain size distribution and tested to determine the content of organic carbon and moisture. The composited samples were also tested for specific gravity, settling rates, and Atterburg limits. Physical testing data and soil descriptions can be referenced Table 19.

The composited reference zone sample had a grain size content of 0.2percent gravel, 91.4 percent sand, and 8.4 percent silt/clay.

For channel zone samples E-KB04-1 through E-KB04-4, it was determined that the major particle size component was of sand, which ranged from 86.7 to 94.7 percent. Zone E-KB04-5 had a percent sand content of 67.1 percent, which was less than the western zone samples, but greater than the eastern most zone samples. Zones E-KB04-6 through E-KB04-8 had the lowest sand content ranging from 15.3 to 26.0 percent.

Channel zone samples E-KB04-6 through E-KB04-8 tended to have a high silt/clay content, ranging from 74.0 to 84.7 percent.

Total organic carbon ranged from non detects to 3.96% in the channel zone sediment samples, while the reference sediment contained 0.23 percent total organic carbon.

Sediment physical testing reports are presented in Table 19 and in Appendix E.

5.3 Sediment Chemical Data

Channel zone composites and the reference composite were analyzed for metals, pesticides, PCB aroclors and congeners, PAHs, organotins, total ammonia, cyanide, oil and grease, and total sulfide. Quantifiable values have been bolded on the tables to facilitate locating them.

All chemical laboratory reports, complete with laboratory quality assurance narratives, appear in Appendix F.

5.3.1 Sediment Metals

Antimony and silver were not detected in the sediment samples at concentrations greater than the requested detection limits listed in the Sampling Plan and Protocol document. Mercury was detected slightly above the detection limit in zone composite E-KB04-6 at 0.05 ppm, dry weight. Aluminum and iron were detected in all sediment samples with zone composite E-KB04-6 having the highest concentration at 25,300 and 26,100 ppm respective. Cadmium was detected in trace amounts in composited zone samples E-KB04-6, 7 and 8, including the reference composite, ranging from 0.10 to 0.14 ppm. Arsenic, copper, lead and nickel were found in all sediments in various concentrations ranging from 0.49 to 16.7 ppm. Chromium and zinc were reported in all sediment samples in elevated concentrations ranging from 1.2 to 35.8 ppm. Metal results from zones E-KB04-6, 7 and 8 tended to be in higher concentration in comparison to the other zone samples and the reference sample.

Table 5 presents the metals in sediments and percent solids data.

5.3.2 Sediment Pesticides and PCBs

Pesticides were not detected in the zone sediment samples or the reference sediment.

Only one elevated PCB aroclor, PCB-1254, was detected in the sediment samples, which was in composite E-KB04-5 dupe, in the amount of 0.110 ppm.

PCB congener 206 was detected in zone sediment samples E-KB04-4, 5 and 8, but in trace amounts, ranging from 1.4 to 8.3 ppb.

Tables 3 through 8 presents the pesticide, PCB aroclor, and PCB congener data for the zone composite sediments and the reference sediment.

5.3.3 Sediment PAHs

PAHs were not detected in the zone sediment samples or the reference sediment.

PAH data are shown on Table 9.

5.3.4 Sediment Total Organic Tins

No organotin compounds were found in the zone sediment samples or the offshore reference sediment.

Table 10 presents the organotin values.

5.3.5 Sediment Total Ammonia

All sediments had detectable values of ammonia, ranging from 5.34 ppm in the reference sediment to 87.3 ppm in zone composite E-KB04-6.

Ammonia data are shown on Table 4.

5.3.6 Sediment Total Sulfide

Reference sediment RS-KB04 had a detectable amount of sulfide at 43.3 ppm. Zone samples had sulfide values ranging from <1.9 to 743 ppm, with E-KB04-8 having the greatest concentration.

Sulfide data are shown on Table 4.

5.3.7 Sediment Total Cyanide

No cyanide was detected in the sediment samples.

Cyanide data are shown on Table 4.

5.3.8 Sediment Oil and Grease

Oil and grease was not detected in the reference sediment. Zone samples E-KB04-5 dupe, 6 and 8 had slightly elevated oil and grease results ranging from 110 to 160 ppm.

Oil and grease data are shown on Table 4.

5.4 Water and Elutriate Chemical Data

The channel zone sediment samples and the reference sediment were subjected to standard elutriation testing, using site water collected from a central location in the King's Bay area. Background water and elutriates were tested for the same parameters as of the sediment composite samples. Quantifiable values have been bolded on the tables to facilitate locating them.

All chemical laboratory reports, complete with chain of custody forms and laboratory quality assurance narratives, appear in Appendix F.

5.4.1 Aqueous Metals

Antimony, cadmium, chromium, copper, lead, mercury, and silver were undetected in all of the elutriated samples including the background water.

Arsenic, nickel, and zinc were found in all of the elutriate samples and background water sample. Arsenic ranged from 1.5 to 17.4 ppb in the zone elutriates, and 1.5 and 5.6 ppb in the background water and reference elutriate, respective.

Reference elutriate RS-KB04 yielded the greatest concentration of nickel at 1.9 ppb.

Zinc ranged from 1.11 ppb in the background water to 13.9 ppb in zone elutriate E-KB04-5. Reference elutriate RS-KB04 had a zinc value of 5.85 ppb.

Table 12 shows the metals data in the background water and the reference and zone elutriates.

5.4.2 Aqueous Pesticides and PCB Congeners

Pesticides, PCB Aroclors and PCB congeners were not detected above the Sampling Plan and Protocol's requested detection limits in the zone elutriate samples, reference elutriate or in the background water.

Tables 13 through 15 present pesticide, PCB Aroclor and PCB congener data.

5.4.3 Aqueous PAHs

PAH compounds were not detected in the elutriate samples or the background water sample.

Table 16 presents the PAH in elutriate and background water data.

5.4.4 Aqueous Organotins

No organotin compounds were detected in the channel zone elutriates or the reference elutriate, including the background water.

Table 17 presents the organotin elutriate values.

5.4.5 Aqueous Oil and Grease, Total Organic Carbon, Sulfide, Cyanide and Total Ammonia

Oil and grease was not detected in the elutriates and background water sample.

Total organic carbon ranged from 3.9 to 9.8 ppm in the elutriate and background water samples.

Ammonia was not detected in the background water sample or in zone elutriate sample E-KB04-1. The remaining samples had ammonia values ranging from 0.10 to 7.9 ppm.

Cyanide was detected in low concentrations ranging from 0.006 to 0.008 ppm.

Sulfide was not detected in the reference elutriate or the background water sample, however, sulfide was found in the zone elutriates from 1.0 to 6.3 ppm.

Table 11 presents the oil and grease, total organic carbon, sulfide, cyanide and total ammonia elutriate data.

6 Quality Assurance and Control

Chemical data quality was monitored and assured within PPB Environmental Laboratories, Gainesville, Florida laboratory and Columbia Analytical Laboratories, Kelso, Washington laboratory.

Pre-designated sampling stations were located using differentially corrected global positioning system receivers.

Review of the field data and sample collection process and laboratory data and quality assurance reports show that all data are usable for project purposes of this Section 103 pre-dredging sediment evaluation.

6.1 Field Quality Assurance Summary

Before field activities began, the project goals and approach for field activities were described in a US Army Corps of Engineers approved Sampling Plan and Protocol. These were provided to field team members prior to traveling to King's Bay. The field team was staffed with personnel with appropriate training and experience for the tasks they were assigned. These individuals followed the procedures and methods described in the Sampling Plan and Protocol for sample collection, preservation, storage, and transport.

Field sampling personnel noted any deficiencies on the preprinted field sheets. All information was properly documented on field sheets, sample labels, and chain of custody forms. There was no sampling problems encountered, which would require corrective action documentation.

PPB and CAS laboratory personnel received all sample containers in good condition.

All samples and collected field data were judged acceptable for project needs.

6.2 Chemical Laboratory Quality Assurance and Control

Columbia Analytical Laboratories quality assurance case narrative reports appear in Appendix F with the laboratory data reports that they describe. All routine problems encountered during analyses were reported during analyses were successfully addressed.

The data set for these analyses meets the data quality objectives for the project. All analytical holding times were met.

Channel zone field duplicates E-KB04-5 and E-KB04-5 Dupe data set was found to compare reasonably well. Most exceptions occurred where analytical results for the native sample (original sample) and duplicate sample were very close to or less than the method reporting limits. As the laboratory attempts to quantify results approaching the method-reporting limit (MRL) the variability of accuracy and precision become greater. This is because the MRL is derived from a statistical model where uncertainty is greater a lower levels. For instance two samples, which differ by 2 ppb, will experience much greater variability at low levels, such as 2 ppb and 4 ppb, than at higher levels with values, such as 10 ppb and 12ppb where less uncertainty is experienced. The concentration where issue is most prevalent is between the method detection limit (MDL) and the MRL and assigned a "J" qualifier.

Some matrix spike exceedences occurred in the sediment analyses mainly due to matrix interference, or when the spiking level was low relative to the analyte concentration. This was the case for n-butyltin in the channel zone sediment sample E-KB04-4MS, as well with iron and chromium in sample E-KB04-1. 1-Methylnaphthalene and Anthracene for sediment sample E-KB04-5 were outside criteria because of matrix interference. The matrix spike duplicate produced similar results. Insufficient sample was provided to prepare laboratory matrix spike or duplicate samples for the reductive precipitation procedure used in the method for metals in elutriates analyses. Two Laboratory control samples were analyzed as to offer accuracy and precision data.

Some detection limits were elevated for Organochlorine pesticides and PCB congeners due to contributions of interfering compounds from the sample matrix. Methods which employ Gas Chromatography, with the exception of Gas chromatography/Mass spectrometry, are required to be confirmed on a dissimilar second analytical chromatographic column. Agreement between the concentrations on the primary and confirmation should be less than 40% and a P qualifier assign to the result. However, when the analyte is at very low levels where the variability is greatest, the 40% may be exceeded. Due to the low levels found in these samples this is often the case. Where the laboratory found evidence on matrix interference, which might contribute to the difference the lower of the two values, was reported.

No anomalies were found for metals for channel zone sediments or elutriates except for Fe and Al in the zone sediments. The matrix spike control criterion was exceeded because of the high analyte levels relative to the spiking levels. The laboratory control sample (LCS) was prepared in the laboratory with all reagents used in the analyses but in de-ionized water. The sample was prepared to evaluate if the analytical system was in control. When the matrix spike and matrix spike duplicate has one or more analytes which exceed control limits and the laboratory control sample meets control criteria it strongly suggest the matrix spike and matrix spike duplicate contained something in the sample which affected instrument response.

The case narratives and data tables for this narrative may be found in Appendix F.

7 Conclusions

All data were collected as planned for the chemical and physical characterization of sediment from King's Bay along with similar data from the ODMDS reference site for comparison. Appropriate methods and procedures were employed to collect and deliver sediment samples to the analytical laboratory in a condition that was representative of the site at the time of collection. All quality control and quality assurance objectives were met. Most of the detection limits were met or were lower than those specified by the Sampling Plan and Protocol submitted to PPB Environmental Services by the US Army Corps of Engineers. All data are judged to be of acceptable quality for project needs.

8 References

The following references were cited in this report or were consulted for technical guidance during the planning and implementation of this project.

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Plumb, R.H., Jr. 1981. "Procedure for Handling and Chemical Analysis of Sediment and Water Samples." Technical Report EPA/CE-81-1.

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USEPA, Region II and USACE, New York District. Draft dated December1992 (undated updates attached). "Guidance for Performing Tests on Dredged Material Proposed for Ocean Disposal."

USEPA and USACE. April 1995. "QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Material Evaluations - Chemical Evaluations." EPA 823-B-95-001.

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Table 1

Sampling Coordinates and Sampling Techniques for King's Bay (Florida) Samples Collected December 2004

Zone - Station	Sampling Technique	Depth (feet)	Easting (feet)	Northing (feet)	Latitude	Longitude
E-KB04-1-1	Van Veen	45ft	891549.1	259035.3	30° 42.6069' N	81° 25.0586' W
E-KB04-1-2	Van Veen	47ft	891549.6	258562.9	30° 42.5290' N	81° 25.0591' W
E-KB04-1-3	Van Veen	49ft	892307.1	258618.9	30° 42.5374' N	81° 24.9144' W
E-KB04-1-4	Van Veen	46ft	893026.2	259417.9	30° 42.6684' N	81° 24.7761' W
E-KB04-1-5	Van Veen	49ft	893046.9	258665.7	30° 42.5443' N	81° 24.7731' W
E-KB04-2-1	Van Veen	49ft	894536.1	259459.0	30° 42.6735' N	81° 24.4878' W
E-KB04-2-2	Van Veen	49ft	894550.6	258745.3	30° 42.5558' N	81° 24.4860' W
E-KB04-2-3	Van Veen	50ft	895220.8	259485.1	30° 42.6771' N	81° 24.3571' W
E-KB04-2-4	Van Veen	50ft	896026.8	259535.5	30° 42.6845' N	81° 24.2031' W
E-KB04-2-5	Van Veen	50ft	896062.1	258817.4	30° 42.5660' N	81° 24.1973' W
E-KB04-3-1	Van Veen	50ft	897503.1	259606.8	30° 42.6946' N	81° 23.9212' W
E-KB04-3-2	Van Veen	50ft	897542.6	258880.6	30° 42.5747' N	81° 23.9146' W
E-KB04-3-3	Van Veen	46ft	898270.8	259629.1	30° 42.6974' N	81° 23.7746' W
E-KB04-3-4	Van Veen	45ft	899011.7	259531.2	30° 42.6804' N	81° 23.6332' W
E-KB04-3-5	Van Veen	47ft	899035.2	258791.8	30° 42.5584' N	81° 23.6297' W
E-KB04-4-1	Van Veen	39ft	900507.6	259583.0	30° 42.6872' N	81° 23.3476' W
E-KB04-4-2	Van Veen	48ft	900572.9	258859.1	30° 42.5677' N	81° 23.3361' W
E-KB04-4-3	Van Veen	48ft	901310.1	258901.3	30° 42.5739' N	81° 23.1953' W
E-KB04-4-4	Van Veen	42ft	902016.6	259641.2	30° 42.6951' N	81° 23.0594' W
E-KB04-4-5	Van Veen	48ft	902041.6	258931.9	30° 42.5781' N	81° 23.0556' W
E-KB04-5-1	Van Veen	50ft	903513.3	259590.9	30° 42.6851' N	81° 22.7737' W
E-KB04-5-2	Van Veen	50ft	903544.8	259130.6	30° 42.6091' N	81° 22.7683' W
E-KB04-5-3	Van Veen	50ft	904274.6	259588.5	30° 42.6838' N	81° 22.6284' W
E-KB04-5-4	Van Veen	50ft	904990.7	259649.5	30° 42.6930' N	81° 22.4916' W
E-KB04-5-5	Van Veen	50ft	905035.8	259230.7	30° 42.6239' N	81° 22.4835' W
E-KB04-6-1	Van Veen	49ft	906516.2	259720.8	30° 42.7030' N	81° 22.2003' W
E-KB04-6-2	Van Veen	49ft	906525.3	259281.7	30° 42.6306' N	81° 22.1991' W
E-KB04-6-3	Van Veen	49ft	907297.0	259333.4	30° 42.6382' N	81° 22.0517' W
E-KB04-6-4	Van Veen	48ft	908022.8	259759.4	30° 42.7076' N	81° 21.9126' W
E-KB04-6-5	Van Veen	48ft	908030.6	259356.4	30° 42.6411' N	81° 21.9116' W
E-KB04-7-1	Van Veen	48ft	909516.2	259839.5	30° 42.7191' N	81° 21.6273' W
E-KB04-7-2	Van Veen	49ft	909538.2	259416.1	30° 42.6492' N	81° 21.6237' W
E-KB04-7-3	Van Veen	48ft	910278.2	259858.3	30° 42.7213' N	81° 21.4818' W
E-KB04-7-4	Van Veen	49ft	911029.6	259924.7	30° 42.7313' N	81° 21.3383' W
E-KB04-7-5	Van Veen	48ft	911028.8	259481.0	30° 42.6581' N	81° 21.3391' W
E-KB04-8-1	Van Veen	49ft	912514.8	259981.0	30° 42.7388' N	81° 21.0547' W
E-KB04-8-2	Van Veen	48ft	912532.6	259568.9	30° 42.6708' N	81° 21.0518' W
E-KB04-8-3	Van Veen	49ft	913261.8	260019.9	30° 42.7443' N	81° 20.9120' W
E-KB04-8-4	Van Veen	49ft	914026.8	260052.5	30° 42.7488' N	81° 20.7659' W
E-KB04-8-5	Van Veen	49ft	914018.5	259636.1	30° 42.6801' N	81° 20.7681' W
RS-KB04-B	Van Veen	59ft	929453.1	183710.2	30° 30.1363' N	81° 17.9332' W
RS-KB04-A	Van Veen	65ft	929000.8	206559.5	30° 33.9061' N	81° 17.9859' W

Coordinates: U.S. State Plane 1983 Georgia East Zone NAD-83 Feet

Table 2

Sediment and Elutriate Analytes With Analytical Methods for King's Bay (Florida) Samples Collected December 2004

Analyte	Sediment Method Number	Elutriate Method Number
Aluminum	6010 B	na
Antimony	200.8	200.8
Arsenic	200.8	200.8
Cadmium	200.8	200.8
Chromium	200.8	200.8
Copper	200.8	200.8
Iron	6010 B	na
Lead	200.8	200.8
Mercury	7471 A	7470 A
Nickel	200.8	200.8
Silver	200.8	200.8
Zinc	200.8	200.8
Pesticides	8081 A / Extraction: 3540 C	8081 A / Extraction: 3535
PCB Aroclors	8082 / Extraction: 3540 C	8082 / Extraction: 3535
PCB Congeners	8082 / Extraction: 3540 C	8082 / Extraction: 3520 C
PAHs	8270 C SIM / Extraction: 3541	8270 C SIM / Extraction: 3535
Organotins	CAS Method / Extraction: Krone	EPA 3520 C / Extraction: Krone
Oil and Grease	1664 / Prep Method: 9071A	1664
Total Organic Carbon	PSEP	415.1
Total Sulfide	9030M	376.1
Cyanide	335.2	335.2
Ammonia	350.1	350.1
Percent Solids	160.3	na
Grain Size	ASTM D422	na
Specific Gravity	ASTM D854	na
Atterburg Limits	ASTM D4318	na
Settling Rates	Corps SAD Lab Method	na

Table 3

Physical Analysis and Total Organic Carbon for King's Bay (Florida) Samples Collected December 2004

Sample ID	Grain Size Distribution (percent)					
	Gravel >2.00 mm	Sand 2.00 - 0.0625 mm	Silt 0.0625 - 0.0039 mm	Clay <0.0039 mm	TOC (dry weight) percent	Percent Solids
RS-KB04	0.2	91.4	8.4		**0.23**	77.0
E-KB04-1	12.4	86.7	0.9		0.10 U	86.3
E-KB04-2	9.2	89.4	1.4		0.10 U	82.4
E-KB04-3	6.5	91.6	1.9		0.10 U	78.3
E-KB04-4	0.2	94.7	5.1		**0.23**	79.7
E-KB04-5	0.1	67.1	32.8		**1.43**	47.7
E-KB04-6	na	15.3	84.7		**3.96**	28.3
E-KB04-7	0.1	24.8	75.1		**2.93**	34.4
E-KB04-8	na	26.0	74.0		**2.77**	37.9

Sample ID	Specific Gravity	Plastic Limit	Liquid Limit	Plasticity Index
RS-KB04	2.682	non-plastic	non-plastic	non-plastic
E-KB04-1	2.726	non-plastic	non-plastic	non-plastic
E-KB04-2	2.704	non-plastic	non-plastic	non-plastic
E-KB04-3	2.698	non-plastic	non-plastic	non-plastic
E-KB04-4	2.664	non-plastic	non-plastic	non-plastic
E-KB04-5	2.633	31	72	41
E-KB04-6	2.577	59	174	115
E-KB04-7	2.586	49	128	79
E-KB04-8	2.584	45	121	76

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

Table 4

Sediment Oil Grease, Total Organic Carbon, Total Sulfide, Cyanide and Ammonia Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Percent Solids (%)	Oil and Grease mg/Kg (ppm)				Total Organic Carbon Percent (%)				Total Sulfide mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	100	U	74	U	**0.23%**	--	**0.17%**	--	**43.3**	--	**32.1**	--
E-KB04-1	80.5%	100	U	81	U	0.10%	U	0.08%	U	1.9	U	1.5	U
E-KB04-2	76.7%	100	U	77	U	0.10%	U	0.08%	U	**3.7**	--	**2.8**	--
E-KB04-3	77.2%	100	U	77	U	0.10%	U	0.08%	U	1.9	U	1.47	U
E-KB04-4	68.9%	100	U	69	U	**0.23%**	--	**0.16%**	--	1.9	U	1.31	U
E-KB04-5	45.4%	100	U	45	U	**1.43%**	--	**0.65%**	--	**121**	--	**54.9**	--
E-KB04-5 Dupe	48.5%	**160**	--	**78**	--	**1.17%**	--	**0.57%**	--	**131**	--	**63.5**	--
E-KB04-6	27.5%	**110**	--	**30**	--	**3.96%**	--	**1.09%**	--	**291**	--	**80.0**	--
E-KB04-7	35.2%	100	U	35	U	**2.93%**	--	**1.03%**	--	**313**	--	**110**	--
E-KB04-8	36.4%	**160**	--	**58**	--	**2.77%**	--	**1.01%**	--	**743**	--	**270**	--

Sample ID	Percent Solids (%)	Cyanide mg/Kg (ppm)				Ammonia mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	1.0	U	0.74	U	**5.34**	--	**3.96**	--
E-KB04-1	80.5%	1.0	U	0.81	U	**7.36**	--	**5.92**	--
E-KB04-2	76.7%	1.0	U	0.77	U	**3.79**	--	**2.91**	--
E-KB04-3	77.2%	1.0	U	0.77	U	**3.75**	--	**2.90**	--
E-KB04-4	68.9%	1.0	U	0.69	U	**7.22**	--	**4.97**	--
E-KB04-5	45.4%	1.0	U	0.45	U	**23.4**	--	**10.6**	--
E-KB04-5 Dupe	48.5%	1.0	U	0.49	U	**27.3**	--	**13.2**	--
E-KB04-6	27.5%	1.0	U	0.28	U	**87.3**	--	**24.0**	--
E-KB04-7	35.2%	1.0	U	0.35	U	**51.9**	--	**18.3**	--
E-KB04-8	36.4%	1.0	U	0.36	U	**47.6**	--	**17.3**	--

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Table 5

Sediment Metals Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Percent Solids (%)	**Aluminum** mg/Kg (ppm)				Antimony mg/Kg (ppm)				**Arsenic** mg/Kg (ppm)				**Cadmium** mg/Kg (ppm)				**Chromium** mg/Kg (ppm)				**Copper** mg/Kg (ppm)			
		Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes
RS-KB04	74.1%	**1820**	--	**1349**	--	0.30 U		0.22 U		**1.6**	--	**1.2**	--	**0.10**	--	**0.07**	--	**5.3**	--	**3.9**	--	**1.1**	--	**0.84**	--
E-KB04-1	80.5%	**107**	--	**86**	--	0.30 U		0.24 U		**2.6**	--	**2.1**	--	0.10 U		0.08 U		**1.3**	--	**1.0**	--	**0.94**	--	**0.76**	--
E-KB04-2	76.7%	**219**	--	**168**	--	0.30 U		0.23 U		**1.5**	--	**1.2**	--	0.10 U		0.08 U		**1.5**	--	**1.1**	--	**0.89**	--	**0.68**	--
E-KB04-3	77.2%	**329**	--	**254**	--	0.30 U		0.23 U		**1.7**	--	**1.3**	--	0.10 U		0.08 U		**2.3**	--	**1.8**	--	**0.61**	--	**0.47**	--
E-KB04-4	68.9%	**1500**	--	**1034**	--	0.30 U		0.21 U		**2.2**	--	**1.5**	--	0.10 U		0.07 U		**3.6**	--	**2.5**	--	**0.81**	--	**0.56**	--
E-KB04-5	45.4%	**4890**	--	**2220**	--	0.30 U		0.14 U		**5.9**	--	**2.7**	--	0.10 U		0.05 U		**14.1**	--	**6.4**	--	**2.8**	--	**1.3**	--
E-KB04-5 Dupe	48.5%	**7230**	--	**3507**	--	0.30 U		0.15 U		**5.0**	--	**2.4**	--	0.10 U		0.05 U		**13.7**	--	**6.6**	--	**2.6**	--	**1.3**	--
E-KB04-6	27.5%	**25300**	--	**6958**	--	0.30 U		0.08 U		**13.2**	--	**3.6**	--	**0.14**	--	**0.04**	--	**35.8**	--	**9.8**	--	**6.9**	--	**1.9**	--
E-KB04-7	35.2%	**15200**	--	**5350**	--	0.30 U		0.11 U		**10.7**	--	**3.8**	--	**0.12**	--	**0.04**	--	**25.8**	--	**9.1**	--	**5.2**	--	**1.8**	--
E-KB04-8	36.4%	**17300**	--	**6297**	--	0.30 U		0.11 U		**10.6**	--	**3.9**	--	**0.13**	--	**0.05**	--	**28.6**	--	**10.4**	--	**5.6**	--	**2.0**	--

Sample ID	Percent Solids (%)	**Iron** mg/Kg (ppm)				**Lead** mg/Kg (ppm)				**Mercury** mg/Kg (ppm)				**Nickel** mg/Kg (ppm)				Silver mg/Kg (ppm)				**Zinc** mg/Kg (ppm)			
		Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes
RS-KB04	74.1%	**2100**	--	**1556**	--	**1.3**	--	**0.93**	--	0.05 U		0.04 U		**1.7**	--	**1.3**	--	0.10 U		0.07 U		**4.0**	--	**3.0**	--
E-KB04-1	80.5%	**852**	--	**686**	--	**0.62**	--	**0.50**	--	0.05 U		0.04 U		**0.77**	--	**0.62**	--	0.10 U		0.08 U		**1.3**	--	**1.0**	--
E-KB04-2	76.7%	**1450**	--	**1112**	--	**0.49**	--	**0.38**	--	0.05 U		0.04 U		**0.77**	--	**0.59**	--	0.10 U		0.08 U		**1.2**	--	**0.92**	--
E-KB04-3	77.2%	**1080**	--	**834**	--	**0.53**	--	**0.41**	--	0.05 U		0.04 U		**0.96**	--	**0.74**	--	0.10 U		0.08 U		**1.4**	--	**1.1**	--
E-KB04-4	68.9%	**2240**	--	**1543**	--	**1.3**	--	**0.88**	--	0.05 U		0.03 U		**1.2**	--	**0.79**	--	0.10 U		0.07 U		**3.5**	--	**2.4**	--
E-KB04-5	45.4%	**8750**	--	**3973**	--	**6.5**	--	**2.9**	--	0.05 U		0.02 U		**4.8**	--	**2.2**	--	0.10 U		0.05 U		**15.4**	--	**7.0**	--
E-KB04-5 Dupe	48.5%	**8420**	--	**4084**	--	**5.6**	--	**2.7**	--	0.05 U		0.02 U		**4.8**	--	**2.3**	--	0.10 U		0.05 U		**13.8**	--	**6.7**	--
E-KB04-6	27.5%	**26100**	--	**7178**	--	**16.7**	--	**4.6**	--	**0.05**	--	**0.01**	--	**12.6**	--	**3.5**	--	0.10 U		0.03 U		**35.7**	--	**9.8**	--
E-KB04-7	35.2%	**19400**	--	**6829**	--	**11.9**	--	**4.2**	--	0.05 U		0.02 U		**9.0**	--	**3.2**	--	0.10 U		0.04 U		**27.0**	--	**9.5**	--
E-KB04-8	36.4%	**19800**	--	**7207**	--	**13.8**	--	**5.0**	--	0.05 U		0.02 U		**9.9**	--	**3.6**	--	0.10 U		0.04 U		**29.7**	--	**10.8**	--

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Sediment Pesticide Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Percent Solids (%)	Aldrin mg/Kg (ppm)				Chlordane mg/Kg (ppm)				4,4 DDT mg/Kg (ppm)				4,4 DDD mg/Kg (ppm)				4,4 DDE mg/Kg (ppm)				Dieldrin mg/Kg (ppm)				Endosulfan I mg/Kg (ppm)				Endosulfan II mg/Kg (ppm)				Endosulfan sulfate mg/Kg (ppm)				Endrin mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	0.020	U	0.015	U	0.025	U	0.019	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.025	U	0.019	U	0.025	U	0.019	U	0.025	U	0.019	U	0.020	U	0.015	U
E-KB04-1	80.5%	0.020	U	0.016	U	0.025	U	0.020	U	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.025	U	0.020	U	0.025	U	0.020	U	0.025	U	0.020	U	0.020	U	0.016	U
E-KB04-2	76.7%	0.020	U	0.015	U	0.025	U	0.019	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.025	U	0.019	U	0.025	U	0.019	U	0.025	U	0.019	U	0.020	U	0.015	U
E-KB04-3	77.2%	0.020	U	0.015	U	0.025	U	0.019	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.025	U	0.019	U	0.025	U	0.019	U	0.025	U	0.019	U	0.020	U	0.015	U
E-KB04-4	68.9%	0.020	U	0.014	U	0.025	U	0.017	U	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.025	U	0.017	U	0.025	U	0.017	U	0.025	U	0.017	U	0.020	U	0.014	U
E-KB04-5	45.4%	0.020	U	0.009	U	0.025	U	0.011	U	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.025	U	0.011	U	0.025	U	0.011	U	0.025	U	0.011	U	0.020	U	0.009	U
E-KB04-5 Dupe	48.5%	0.020	U	0.010	U	0.048	U*	0.023	U*	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.025	U	0.012	U	0.025	U	0.012	U	0.025	U	0.012	U	0.020	U	0.010	U
E-KB04-6	27.5%	0.020	U	0.006	U	0.025	U	0.007	U	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.025	U	0.007	U	0.025	U	0.007	U	0.025	U	0.007	U	0.020	U	0.006	U
E-KB04-7	35.2%	0.020	U	0.007	U	0.025	U	0.009	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.025	U	0.009	U	0.025	U	0.009	U	0.025	U	0.009	U	0.020	U	0.007	U
E-KB04-8	36.4%	0.020	U	0.007	U	0.025	U	0.009	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.025	U	0.009	U	0.025	U	0.009	U	0.025	U	0.009	U	0.020	U	0.007	U

Sample ID	Percent Solids (%)	Endrin Aldehyde mg/Kg (ppm)				Heptachlor mg/Kg (ppm)				Heptachlor Epoxide mg/Kg (ppm)				Alpha-BHC mg/Kg (ppm)				Beta-BHC mg/Kg (ppm)				Gamma-BHC (Lindane) mg/Kg (ppm)				Delta-BHC mg/Kg (ppm)				Methoxychlor mg/Kg (ppm)				Toxaphene mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.025	U	0.019	U	0.030	U	0.014	U
E-KB04-1	80.5%	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.020	U	0.016	U	0.025	U	0.020	U	0.030	U	0.024	U
E-KB04-2	76.7%	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.025	U	0.019	U	0.030	U	0.023	U
E-KB04-3	77.2%	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.020	U	0.015	U	0.025	U	0.019	U	0.030	U	0.023	U
E-KB04-4	68.9%	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.020	U	0.014	U	0.025	U	0.017	U	0.030	U	0.021	U
E-KB04-5	45.4%	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.020	U	0.009	U	0.025	U	0.011	U	0.030	U	0.014	U
E-KB04-5 Dupe	48.5%	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.020	U	0.010	U	0.025	U	0.012	U	0.033	U	0.016	U
E-KB04-6	27.5%	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.020	U	0.006	U	0.025	U	0.007	U	0.031	U	0.009	U
E-KB04-7	35.2%	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.025	U	0.009	U	0.030	U	0.011	U
E-KB04-8	36.4%	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.020	U	0.007	U	0.025	U	0.009	U	0.030	U	0.011	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Table 7

Sediment PCB Aroclor Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Percent Solids (%)	PCB 1248 mg/Kg (ppm)				**PCB 1254** mg/Kg (ppm)				PCB 1016 mg/Kg (ppm)				PCB 1221 mg/Kg (ppm)			
		Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes
RS-KB04	74.1%	0.010	U	0.007	U	0.010	U	0.007	U	0.010	U	0.007	U	0.020	U	0.015	U
E-KB04-1	80.5%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U	0.020	U	0.016	U
E-KB04-2	76.7%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U	0.020	U	0.015	U
E-KB04-3	77.2%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U	0.020	U	0.015	U
E-KB04-4	68.9%	0.010	U	0.007	U	0.010	U	0.007	U	0.010	U	0.007	U	0.020	U	0.014	U
E-KB04-5	45.4%	0.010	U	0.005	U	0.010	U	0.005	U	0.010	U	0.005	U	0.020	U	0.009	U
E-KB04-5 Dupe	48.5%	0.010	U	0.005	U	**0.110**	--	**0.053**	--	0.010	U	0.005	U	0.020	U	0.010	U
E-KB04-6	27.5%	0.010	U	0.003	U	0.010	U	0.003	U	0.010	U	0.003	U	0.020	U	0.006	U
E-KB04-7	35.2%	0.010	U	0.004	U	0.010	U	0.004	U	0.010	U	0.004	U	0.020	U	0.007	U
E-KB04-8	36.4%	0.010	U	0.004	U	0.010	U	0.004	U	0.010	U	0.004	U	0.020	U	0.007	U

Sample ID	Percent Solids (%)	PCB 1232 mg/Kg (ppm)				PCB 1242 mg/Kg (ppm)				PCB 1260 mg/Kg (ppm)			
		Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes
RS-KB04	74.1%	0.010	U	0.007	U	0.010	U	0.007	U	0.010	U	0.007	U
E-KB04-1	80.5%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U
E-KB04-2	76.7%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U
E-KB04-3	77.2%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U
E-KB04-4	68.9%	0.010	U	0.007	U	0.010	U	0.007	U	0.010	U	0.007	U
E-KB04-5	45.4%	0.010	U	0.005	U	0.010	U	0.005	U	0.010	U	0.005	U
E-KB04-5 Dupe	48.5%	0.010	U	0.005	U	0.010	U	0.005	U	0.010	U	0.005	U
E-KB04-6	27.5%	0.010	U	0.003	U	0.010	U	0.003	U	0.010	U	0.003	U
E-KB04-7	35.2%	0.010	U	0.004	U	0.010	U	0.004	U	0.010	U	0.004	U
E-KB04-8	36.4%	0.010	U	0.004	U	0.010	U	0.004	U	0.010	U	0.004	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Sediment PCB Congener Concentrations for King's Bay (Florida) Samples, December 2004

Sample ID	Percent Solids (%)	PCB 08 mg/Kg (ppm)				PCB 18 mg/Kg (ppm)				PCB 28 mg/Kg (ppm)				PCB 44 mg/Kg (ppm)				PCB 52 mg/Kg (ppm)				PCB 66 mg/Kg (ppm)				PCB 77 mg/Kg (ppm)				PCB 87 mg/Kg (ppm)				PCB 49 mg/Kg (ppm)				PCB 101 mg/Kg (ppm)				PCB 105 mg/Kg (ppm)				PCB 118 mg/Kg (ppm)				PCB 126 mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U
E-KB04-1	80.5%	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U
E-KB04-2	76.7%	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U
E-KB04-3	77.2%	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U
E-KB04-4	68.9%	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U
E-KB04-5	45.4%	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U
E-KB04-5 Dupe	48.5%	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U
E-KB04-6	27.5%	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U
E-KB04-7	35.2%	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U
E-KB04-8	36.4%	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U

Sample ID	Percent Solids (%)	PCB 128 mg/Kg (ppm)				PCB 138 mg/Kg (ppm)				PCB 153 mg/Kg (ppm)				PCB 156 mg/Kg (ppm)				PCB 169 mg/Kg (ppm)				PCB 170 mg/Kg (ppm)				PCB 180 mg/Kg (ppm)				PCB 183 mg/Kg (ppm)				PCB 184 mg/Kg (ppm)				PCB 187 mg/Kg (ppm)				PCB 195 mg/Kg (ppm)				**PCB 206** mg/Kg (ppm)				PCB 209 mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	**0.0014**	--	**0.0010**	--	0.0010	U	0.0007	U
E-KB04-1	80.5%	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U
E-KB04-2	76.7%	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U
E-KB04-3	77.2%	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U	0.0010	U	0.0008	U
E-KB04-4	68.9%	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	**0.0018**	--	**0.0008**	--	0.0010	U	0.0007	U
E-KB04-5	45.4%	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U
E-KB04-5 Dupe	48.5%	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U	0.0010	U	0.0005	U
E-KB04-6	27.5%	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U	0.0010	U	0.0007	U
E-KB04-7	35.2%	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U
E-KB04-8	36.4%	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0007	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	0.0010	U	0.0004	U	**0.0083**	--	**0.0030**	--	0.0010	U	0.0004	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Sediment PAH Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Percent Solids (%)	Acenaphthene mg/Kg (ppm)				Acenaphthylene mg/Kg (ppm)				Anthracene mg/Kg (ppm)				Benzo (a) anthracene mg/Kg (ppm)				Benzo (a) pyrene mg/Kg (ppm)				Benzo (g,h,i) perylene mg/Kg (ppm)				Benzo (k) fluoranthene mg/Kg (ppm)				Benzo (b) fluoranthene mg/Kg (ppm)				Chrysene mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U	
E-KB04-1	80.5%	0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U	
E-KB04-2	76.7%	0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U	
E-KB04-3	77.2%	0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U	
E-KB04-4	68.9%	0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U	
E-KB04-5	45.4%	0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U	
E-KB04-5 Dupe	48.5%	0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U	
E-KB04-6	27.5%	0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U	
E-KB04-7	35.2%	0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U	
E-KB04-8	36.4%	0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U	

Sample ID	Percent Solids (%)	Dibenzo (a,h) anthracene mg/Kg (ppm)				Fluoranthene mg/Kg (ppm)				Fluorene mg/Kg (ppm)				Indeno (1,2,3-cd) pyrene mg/Kg (ppm)				1-Methylnaphthalene mg/Kg (ppm)				2-Methylnaphthalene mg/Kg (ppm)				Naphthalene mg/Kg (ppm)				Phenanthrene mg/Kg (ppm)				Pyrene mg/Kg (ppm)			
		Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes	Reported Value (Dry)	Result Notes	Reported Value (Wet)	Result Notes
RS-KB04	74.1%	0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U	
E-KB04-1	80.5%	0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U		0.020 U		0.016 U	
E-KB04-2	76.7%	0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U	
E-KB04-3	77.2%	0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U		0.020 U		0.015 U	
E-KB04-4	68.9%	0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U		0.020 U		0.014 U	
E-KB04-5	45.4%	0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U		0.020 U		0.009 U	
E-KB04-5 Dupe	48.5%	0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U		0.020 U		0.010 U	
E-KB04-6	27.5%	0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U		0.020 U		0.006 U	
E-KB04-7	35.2%	0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U	
E-KB04-8	36.4%	0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U		0.020 U		0.007 U	

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Table 10

Sediment Organotin Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Percent Solids (%)	n-Butyltin mg/Kg (ppm)				Di-n-butyltin mg/Kg (ppm)				Tri-n-butyltin mg/Kg (ppm)			
		Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes	Reported Value **(Dry)**	Result Notes	Reported Value **(Wet)**	Result Notes
RS-KB04	74.1%	0.010	U	0.007	U	0.010	U	0.007	U	0.010	U	0.007	U
E-KB04-1	80.5%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U
E-KB04-2	76.7%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U
E-KB04-3	77.2%	0.010	U	0.008	U	0.010	U	0.008	U	0.010	U	0.008	U
E-KB04-4	68.9%	0.010	U	0.007	U	0.010	U	0.007	U	0.010	U	0.007	U
E-KB04-5	45.4%	0.010	U	0.005	U	0.010	U	0.005	U	0.010	U	0.005	U
E-KB04-5 Dupe	48.5%	0.010	U	0.005	U	0.010	U	0.005	U	0.010	U	0.005	U
E-KB04-6	27.5%	0.010	U	0.003	U	0.010	U	0.003	U	0.010	U	0.003	U
E-KB04-7	35.2%	0.010	U	0.004	U	0.010	U	0.004	U	0.010	U	0.004	U
E-KB04-8	36.4%	0.010	U	0.004	U	0.010	U	0.004	U	0.010	U	0.004	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Table 11

Elutriate Oil and Grease, Total Organic Carbon, Total Sulfide, Cyanide and Ammonia Concentrations for King's Bay (Florida) December 2004

	Oil and Grease mg/L (ppm)		**Total Organic Carbon** mg/L (ppm)		**Total Sulfide** mg/L (ppm)	
Sample ID	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	5.0	U	**3.5**	--	1.0	U
RS-KB04	5.0	U	**8.0**	--	1.0	U
E-KB04-1	5.0	U	**5.2**	--	**1.4**	--
E-KB04-2	5.0	U	**5.9**	--	1.0	U
E-KB04-3	5.0	U	**6.4**	--	**2.5**	--
E-KB04-4	5.0	U	**5.9**	--	**1.0**	--
E-KB04-5	5.0	U	**9.8**	--	**1.5**	--
E-KB04-5 Dupe	5.0	U	**7.1**	--	**3.5**	--
E-KB04-6	5.0	U	**7.4**	--	**3.0**	--
E-KB04-7	5.0	U	**7.2**	--	**3.2**	--
E-KB04-8	5.0	U	**8.8**	--	**6.3**	--

	Cyanide mg/L (ppm)		**Ammonia** mg/L (ppm)	
Sample ID	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	**0.007**	--	0.10	U
RS-KB04	0.004	U	**0.52**	--
E-KB04-1	**0.007**	--	0.10	U
E-KB04-2	**0.007**	--	**0.10**	--
E-KB04-3	**0.008**	--	**0.13**	--
E-KB04-4	0.004	U	**0.85**	--
E-KB04-5	0.004	U	**4.5**	--
E-KB04-5 Dupe	0.004	U	**4.4**	--
E-KB04-6	0.004	U	**7.9**	--
E-KB04-7	0.004	U	**6.0**	--
E-KB04-8	**0.006**	--	**7.8**	--

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Table 12

Elutriate Metals Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Antimony µg/L (ppb)		**Arsenic** µg/L (ppb)		Cadmium µg/L (ppb)		Chromium µg/L (ppb)		Copper µg/L (ppb)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	3.5	U	**1.5**	--	0.5	U	0.50	U	2.5	U
RS-KB04	3.5	U	**5.6**	--	0.5	U	0.50	U	2.5	U
E-KB04-1	3.5	U	**1.5**	--	0.5	U	0.50	U	2.5	U
E-KB04-2	3.5	U	**2.2**	--	0.5	U	0.50	U	2.5	U
E-KB04-3	3.5	U	**2.0**	--	0.5	U	0.50	U	2.5	U
E-KB04-4	3.5	U	**2.0**	--	0.5	U	0.50	U	2.5	U
E-KB04-5	3.5	U	**4.6**	--	0.5	U	0.50	U	2.5	U
E-KB04-5 Dupe	3.5	U	**5.0**	--	0.5	U	0.50	U	2.5	U
E-KB04-6	3.5	U	**9.5**	--	0.5	U	0.50	U	2.5	U
E-KB04-7	3.5	U	**9.1**	--	0.5	U	0.50	U	2.5	U
E-KB04-8	3.5	U	**17.4**	--	0.5	U	0.50	U	2.5	U

Sample ID	Lead µg/L (ppb)		Mercury µg/L (ppb)		**Nickel** µg/L (ppb)		Silver µg/L (ppb)		**Zinc** µg/L (ppb)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	2.5	U	0.20	U	**0.39**	--	1.0	U	**1.11**	--
RS-KB04	2.5	U	0.20	U	**1.9**	--	1.0	U	**5.85**	--
E-KB04-1	2.5	U	0.20	U	**0.91**	--	1.0	U	**4.03**	--
E-KB04-2	2.5	U	0.20	U	**0.90**	--	1.0	U	**3.97**	--
E-KB04-3	2.5	U	0.20	U	**1.7**	--	1.0	U	**7.73**	--
E-KB04-4	2.5	U	0.20	U	**1.2**	--	1.0	U	**12.3**	--
E-KB04-5	2.5	U	0.20	U	**0.96**	--	1.0	U	**13.9**	--
E-KB04-5 Dupe	2.5	U	0.20	U	**1.0**	--	1.0	U	**3.82**	--
E-KB04-6	2.5	U	0.20	U	**0.83**	--	1.0	U	**7.99**	--
E-KB04-7	2.5	U	0.20	U	**0.68**	--	1.0	U	**4.20**	--
E-KB04-8	2.5	U	0.20	U	**0.67**	--	1.0	U	**2.81**	--

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit

-- = No qualifier needed

Table 13

Elutriate Pesticide Concentrations for King's Bay (Florida) Samples Collected Dec. 2004

	Aldrin mg/L (ppm)		Chlordane mg/L (ppm)		4,4 DDT mg/L (ppm)		4,4 DDE mg/L (ppm)		4,4 DDE mg/L (ppm)		Dieldrin mg/L (ppm)		Endosulfan I mg/L (ppm)		Endosulfan II mg/L (ppm)		Endosulfan sulfate mg/L (ppm)		Endrin mg/L (ppm)	
Sample ID	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
RS-KB04	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-1	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-2	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-3	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-4	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-5	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-5 Dupe	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-6	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-7	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U
E-KB04-8	0.020	U	0.025	U	0.020	U	0.020	U	0.020	U	0.020	U	0.025	U	0.025	U	0.025	U	0.020	U

	Endrin Aldehyde mg/L (ppm)		Heptachlor mg/L (ppm)		Heptachlor Epoxide mg/L (ppm)		Alpha-BHC mg/L (ppm)		Beta-BHC mg/L (ppm)		Gamma-BHC (Lindane) mg/L (ppm)		Delta-BHC mg/L (ppm)		Methoxychlor mg/L (ppm)		Toxaphene mg/L (ppm)	
Sample ID	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
RS-KB04	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-1	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-2	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-3	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-4	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-5	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-5 Dupe	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-6	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-7	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U
E-KB04-8	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.030	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit.

Table 14

Elutriate PCB Aroclor Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	PCB 1248 mg/L (ppm)		PCB 1254 mg/L (ppm)		PCB 1016 mg/L (ppm)		PCB 1221 mg/L (ppm)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.010	U	0.010	U	0.010	U	0.010	U
RS-KB04	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-1	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-2	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-3	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-4	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-5	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-5 Dupe	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-6	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-7	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-8	0.010	U	0.010	U	0.010	U	0.010	U

Sample ID	PCB 1232 mg/L (ppm)		PCB 1242 mg/L (ppm)		PCB 1260 mg/L (ppm)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.010	U	0.010	U	0.010	U
RS-KB04	0.010	U	0.010	U	0.010	U
E-KB04-1	0.010	U	0.010	U	0.010	U
E-KB04-2	0.010	U	0.010	U	0.010	U
E-KB04-3	0.010	U	0.010	U	0.010	U
E-KB04-4	0.010	U	0.010	U	0.010	U
E-KB04-5	0.010	U	0.010	U	0.010	U
E-KB04-5 Dupe	0.010	U	0.010	U	0.010	U
E-KB04-6	0.010	U	0.010	U	0.010	U
E-KB04-7	0.010	U	0.010	U	0.010	U
E-KB04-8	0.010	U	0.010	U	0.010	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit.

Table 15

Elutriate PCB Congener Concentrations for King's Bay (FL) Samples Collected Dec. 2004

	PCB 08 µg/L (ppb)		PCB 18 µg/L (ppb)		PCB 28 µg/L (ppb)		PCB 44 µg/L (ppb)		PCB 52 µg/L (ppb)		PCB 66 µg/L (ppb)		PCB 77 µg/L (ppb)		PCB 87 µg/L (ppb)		PCB 49 µg/L (ppb)		PCB 101 µg/L (ppb)		PCB 105 µg/L (ppb)		PCB 118 µg/L (ppb)		PCB 126 µg/L (ppb)	
Sample ID	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
RS-KB04	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-1	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-2	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-3	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-4	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-5	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-5 Dupe	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-6	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-7	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-8	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U

	PCB 128 µg/L (ppb)		PCB 138 µg/L (ppb)		PCB 153 µg/L (ppb)		PCB 156 µg/L (ppb)		PCB 169 µg/L (ppb)		PCB 170 µg/L (ppb)		PCB 180 µg/L (ppb)		PCB 183 µg/L (ppb)		PCB 184 µg/L (ppb)		PCB 187 µg/L (ppb)		PCB 195 µg/L (ppb)		PCB 206 µg/L (ppb)		PCB 209 µg/L (ppb)	
Sample ID	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
RS-KB04	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-1	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-2	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-3	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-4	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-5	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-5 Dupe	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-6	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-7	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U
E-KB04-8	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U	0.010	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit.

Table 16

Elutriate PAH Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	Acenaphthene mg/L (ppm)		Acenaphthylene mg/L (ppm)		Anthracene mg/L (ppm)		Benzo (a) anthracene mg/L (ppm)		Benzo (a) pyrene mg/L (ppm)		Benzo (g,h,i) perylene mg/L (ppm)		Benzo (k) fluoranthene mg/L (ppm)		Benzo (b) fluoranthene mg/L (ppm)		Chrysene mg/L (ppm)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
RS-KB04	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-1	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-2	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-3	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-4	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-5	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-5 Dupe	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-6	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-7	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-8	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U

Sample ID	Dibenzo (a,h) anthracene mg/L (ppm)		Fluoranthene mg/L (ppm)		Fluorene mg/L (ppm)		Indeno (1,2,3-cd) pyrene mg/L (ppm)		1-Methylnaphthalene mg/L (ppm)		2-Methylnaphthalene mg/L (ppm)		Naphthalene mg/L (ppm)		Phenanthrene mg/L (ppm)		Pyrene mg/L (ppm)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
RS-KB04	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-1	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-2	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-3	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-4	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-5	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-5 Dupe	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-6	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-7	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
E-KB04-8	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit.

-- = No qualifier needed

Table 17

Elutriate Organotin Concentrations for King's Bay (Florida) Samples Collected December 2004

Sample ID	n-Butyltin mg/L (ppm)		Di-n-butyltin mg/L (ppm)		Tri-n-butyltin mg/L (ppm)	
	Reported Value	Result Notes	Reported Value	Result Notes	Reported Value	Result Notes
E-KB04-Reference Water	0.10	U	0.10	U	0.10	U
RS-KB04	0.10	U	0.10	U	0.10	U
E-KB04-1	0.10	U	0.10	U	0.10	U
E-KB04-2	0.10	U	0.10	U	0.10	U
E-KB04-3	0.10	U	0.10	U	0.10	U
E-KB04-4	0.10	U	0.10	U	0.10	U
E-KB04-5	0.10	U	0.10	U	0.10	U
E-KB04-5 Dupe	0.10	U	0.10	U	0.10	U
E-KB04-6	0.10	U	0.10	U	0.10	U
E-KB04-7	0.10	U	0.10	U	0.10	U
E-KB04-8	0.10	U	0.10	U	0.10	U

Notes:

U = The compound was analyzed for, but was not detected ("Non-detect") at or above the requested Sampling Plan and Protocol Method Detection Limit.

Table 19

Physical Testing Graphs for King's Bay (Florida) Samples Collected December 2004

MACTEC

REPORT OF SOIL TESTING

Project: PPB-USACOE-King Bay 2004 Project Number: 6063-04-0017-0900

Client: PPB Environmental Date: January 4, 2005

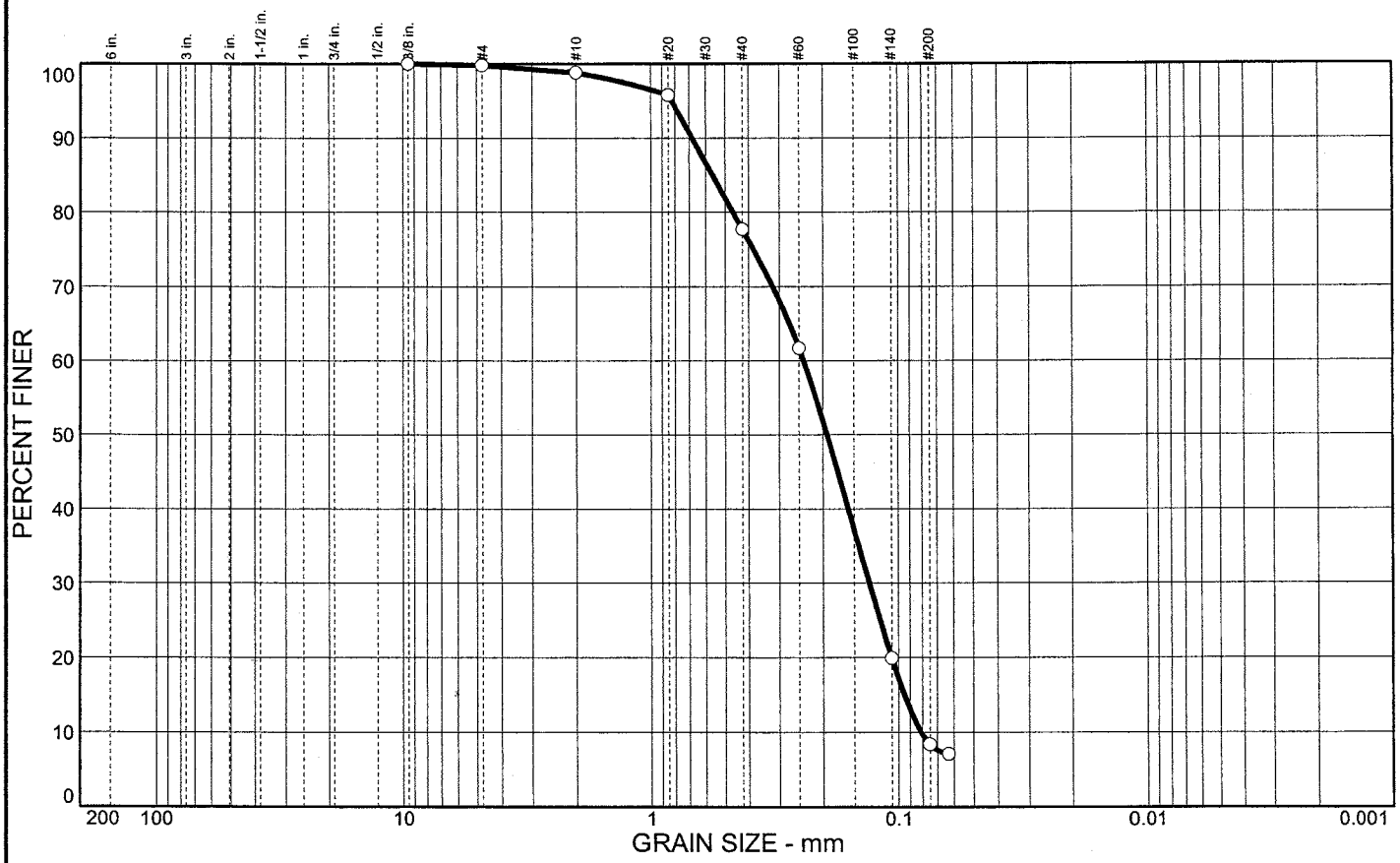
As requested by Mr. Bryan Cotter of PPB Environmental Laboratories, Inc., MACTEC Engineering & Consulting Inc. has completed moisture content and total solids, Atterberg Limits, Specific Gravity, Settling Rate and Grain Size Testing of nine samples that were delivered to our Jacksonville office on December 16, 2004. The results are outlined below and on the attached sheets.

Sample Number	Station	Percent Solids (%)	Moisture Content (%)	Specific Gravity	Atterberg Limits		
					Liquid Limit	Plastic Limit	Plasticity Index
261679	E-KB04-1	86.3	13.7	2.726	NP	NP	NP
261680	E-KB04-2	82.4	17.6	2.704	NP	NP	NP
261681	E-KB04-3	78.3	21.7	2.698	NP	NP	NP
261682	E-KB04-4	79.7	20.3	2.664	NP	NP	NP
261683	E-KB04-5	47.7	52.3	2.633	72	31	41
261685	E-KB04-6	28.3	71.7	2.577	174	59	115
261686	E-KB04-7	34.4	65.6	2.586	128	49	79
261687	E-KB04-8	37.9	62.1	2.584	121	45	76
261688	RS-KB04	77.0	23.0	2.682	NP	NP	NP

Reviewed By
Balaji Balachandran

MACTEC Engineering and Consulting Inc.
3901 Carmichael Avenue
Jacksonville, FL 32207
(904)396-5173

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.2	91.4	8.4		SP-SM	A-3		

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}	0.240		
D_{30}	0.130		
D_{10}	0.0811		
	COEFFICIENTS		
C_c	0.88		
C_u	2.95		

SIEVE number size	PERCENT FINER ○		
#4	99.8		
#10	98.8		
#20	95.8		
#40	77.7		
#60	61.7		
#140	19.9		
#200	8.4		
#230	7.1		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some medium to fine sand sized shell fragments, dark gray and tan

REMARKS:

○

○ Source: RS-KB04

Sample No.: 261688

MACTEC ENGINEERING. AND CONSULTING, INC.

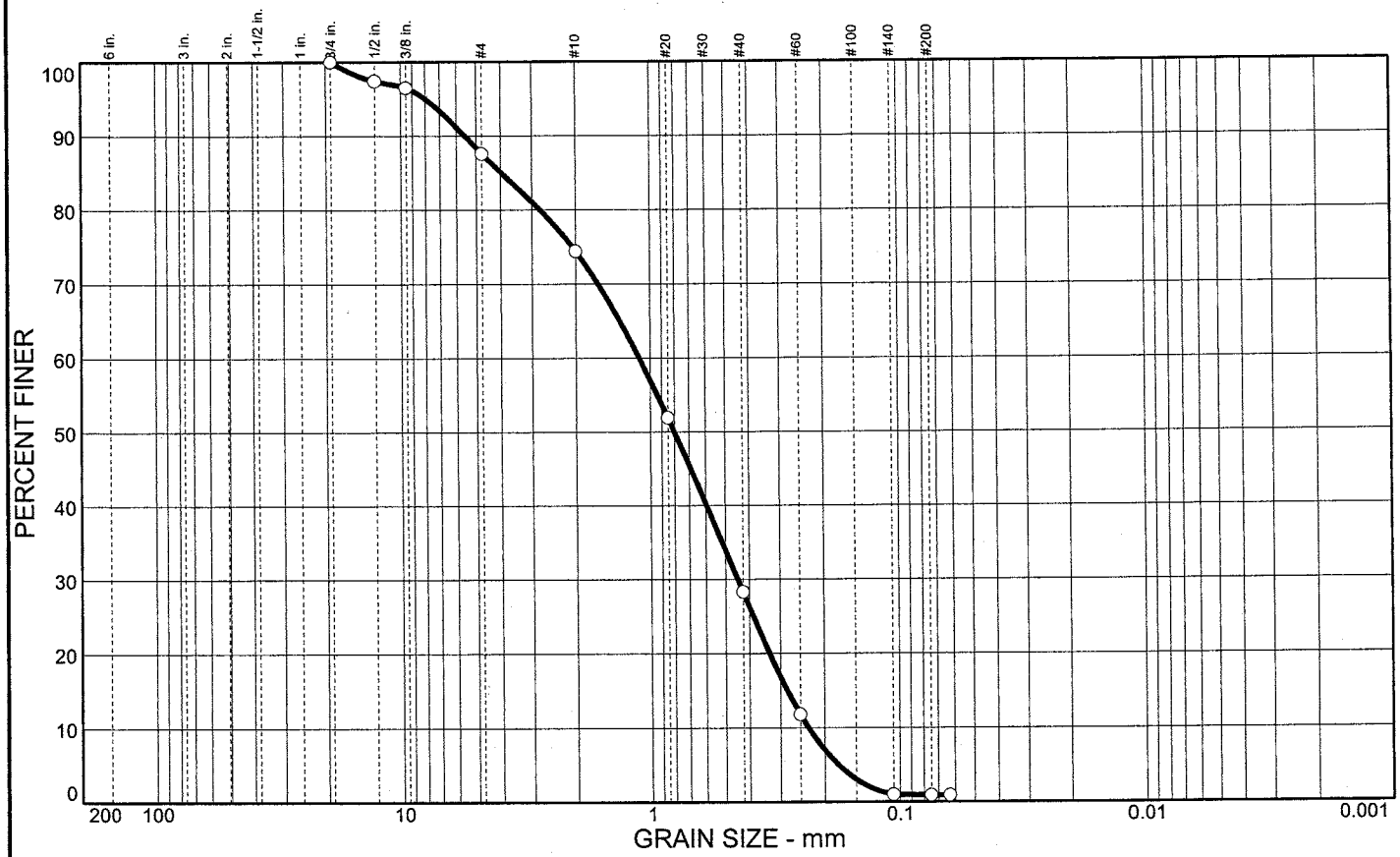
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B·B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		12.4	86.7	0.9		SP	A-1-b	NP	NP

SIEVE inches size	PERCENT FINER ○		
.75	100.0		
.5	97.4		
.375	96.5		
	GRAIN SIZE		
D_{60}	1.11		
D_{30}	0.446		
D_{10}	0.232		
	COEFFICIENTS		
C_c	0.78		
C_u	4.79		

SIEVE number size	PERCENT FINER ○		
#4	87.6		
#10	74.4		
#20	51.9		
#40	28.3		
#60	11.8		
#140	1.0		
#200	0.9		
#230	0.9		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some fine gravel to fine sand sized shell fragments, light tan and gray

REMARKS:

○

○ Source: E-KB04-1

Sample No.: 261679

MACTEC ENGINEERING. AND CONSULTING, INC.

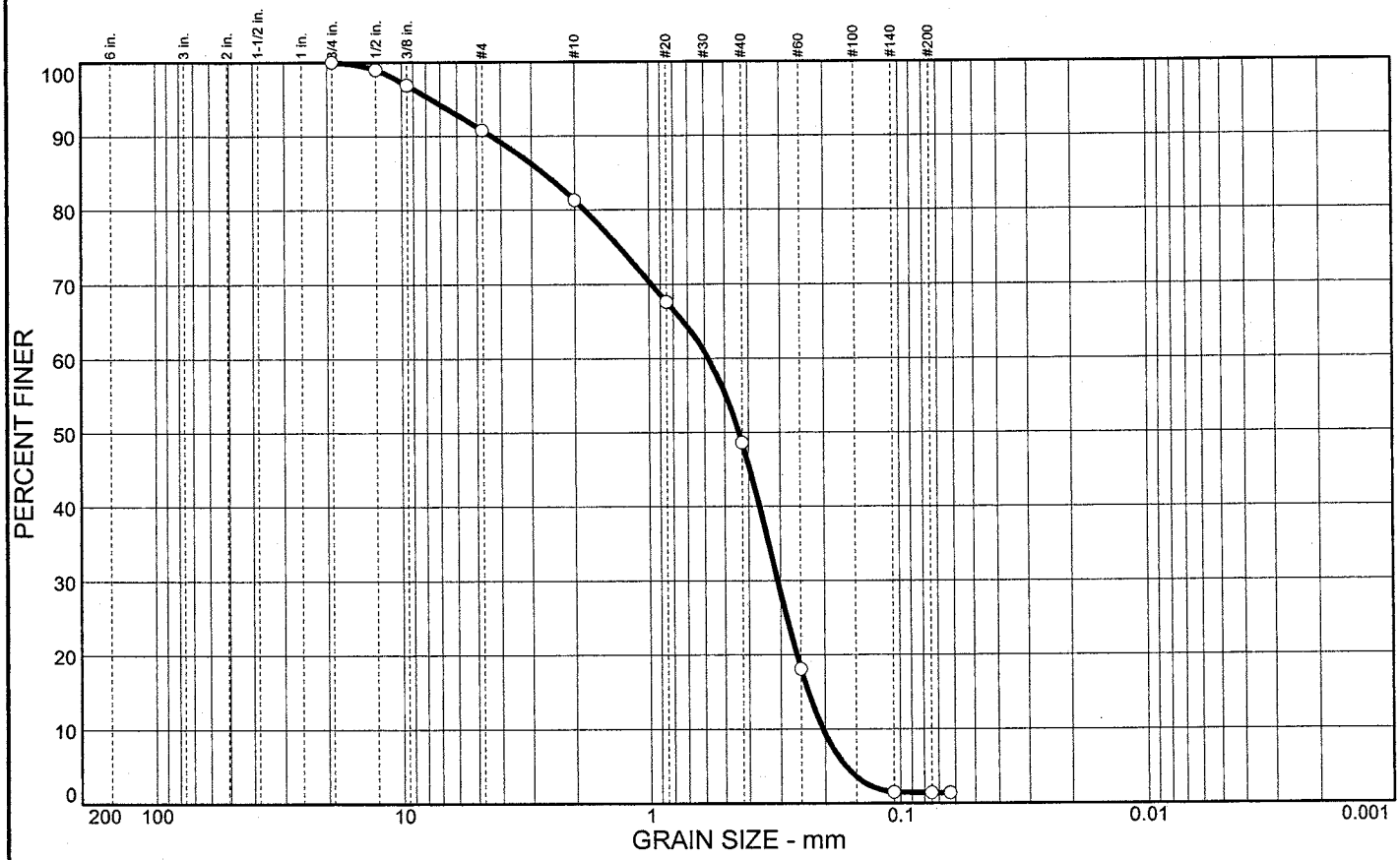
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		9.2	89.4	1.4		SP	A-1-b		

SIEVE inches size	PERCENT FINER ○		
.75	100.0		
.5	99.0		
.375	96.9		
	GRAIN SIZE		
D_{60}	0.580		
D_{30}	0.309		
D_{10}	0.204		
	COEFFICIENTS		
C_c	0.81		
C_u	2.85		

SIEVE number size	PERCENT FINER ○		
#4	90.8		
#10	81.3		
#20	67.6		
#40	48.6		
#60	18.1		
#140	1.5		
#200	1.4		
#230	1.4		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some fine gravel to fine sand sized shell fragments, light tan and gray

REMARKS:

○

○ Source: E-KB04-2

Sample No.: 261680

MACTEC ENGINEERING. AND CONSULTING, INC.

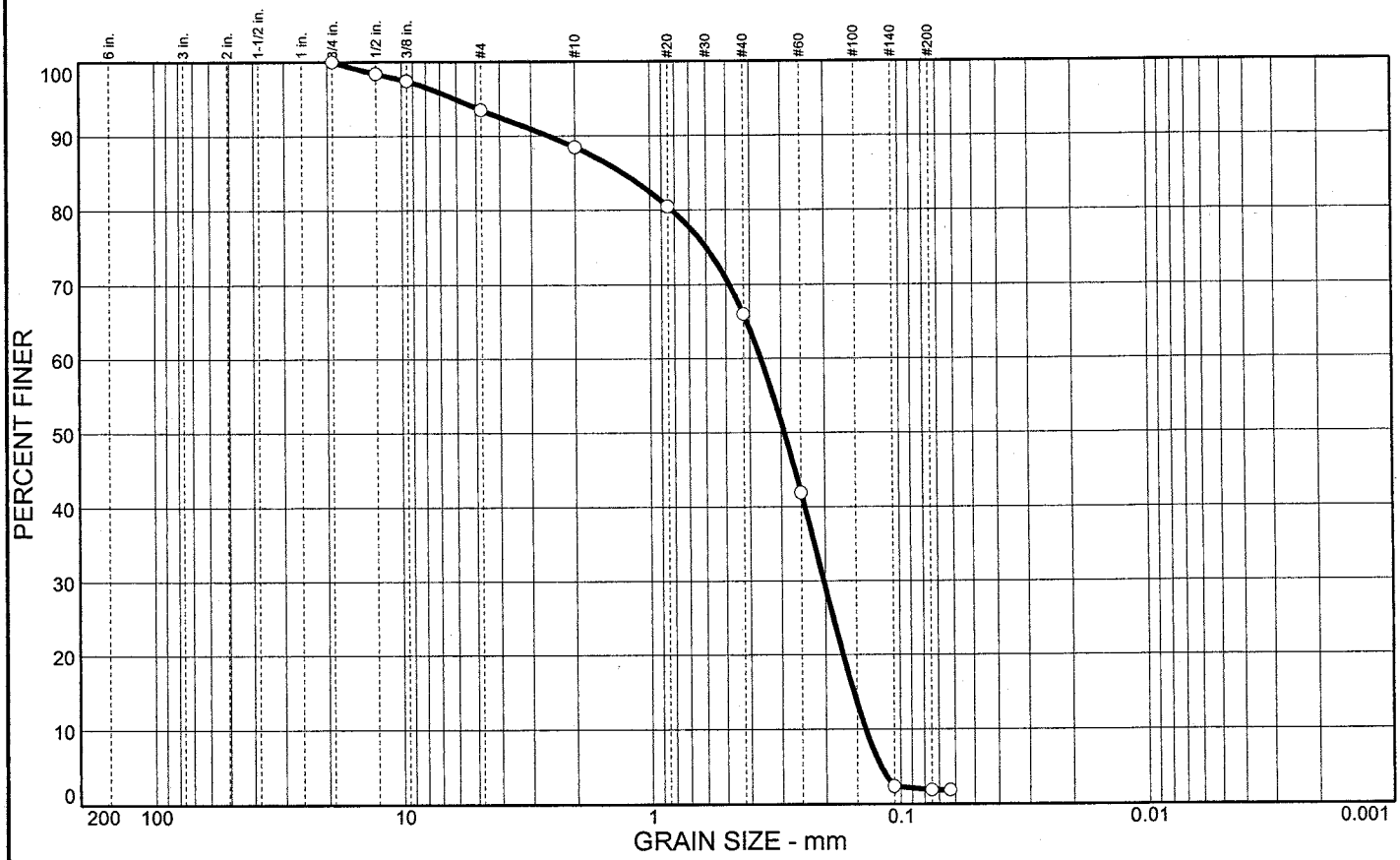
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		6.5	91.6	1.9		SP	A-3		

SIEVE inches size	PERCENT FINER ○		
.75	100.0		
.5	98.4		
.375	97.4		
GRAIN SIZE			
D_{60}	0.362		
D_{30}	0.203		
D_{10}	0.138		
COEFFICIENTS			
C_c	0.82		
C_u	2.62		

SIEVE number size	PERCENT FINER ○		
#4	93.5		
#10	88.5		
#20	80.5		
#40	66.0		
#60	41.9		
#140	2.4		
#200	1.9		
#230	1.9		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some fine gravel to fine sand sized shell fragments, light tan and gray

REMARKS:

○

○ Source: E-KB04-3

Sample No.: 261681

MACTEC ENGINEERING. AND CONSULTING, INC.

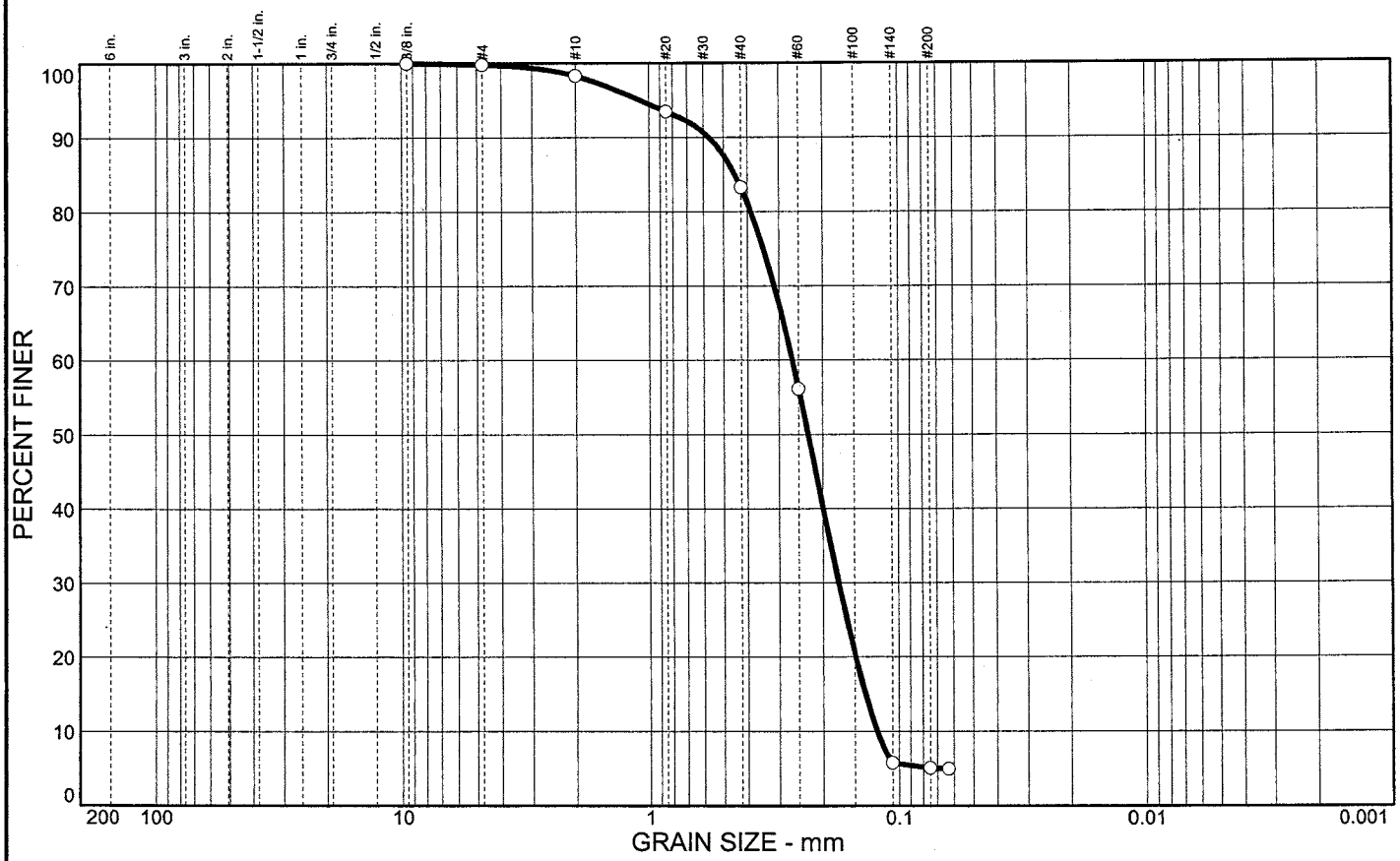
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.2	94.7	5.1		SP-SM	A-3		

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}	0.265		
D_{30}	0.173		
D_{10}	0.122		
	COEFFICIENTS		
C_c	0.93		
C_u	2.17		

SIEVE number size	PERCENT FINER ○		
#4	99.8		
#10	98.3		
#20	93.5		
#40	83.3		
#60	56.1		
#140	5.8		
#200	5.1		
#230	5.0		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, few medium to fine sand sized shell fragments, few silt, dark gray and tan

REMARKS:

○

○ Source: E-KB04-4

Sample No.: 261682

MACTEC ENGINEERING. AND CONSULTING, INC.

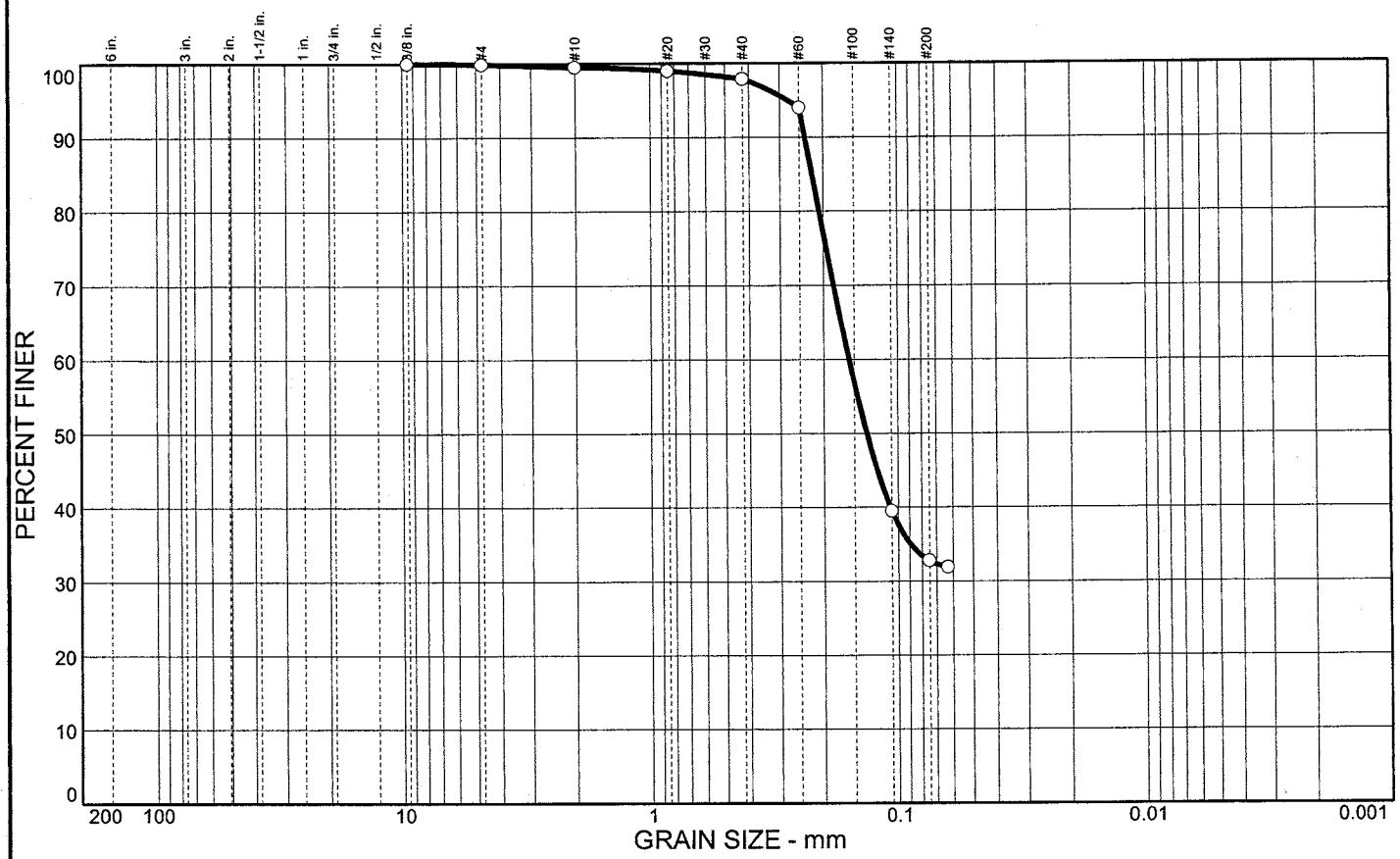
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.1	67.1	32.8		SC	A-2-7(6)	31	72

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}	0.157		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	99.9		
#10	99.5		
#20	99.0		
#40	97.9		
#60	94.0		
#140	39.5		
#200	32.8		
#230	31.9		

SOIL DESCRIPTION

○ SAND, fine quartz, some clay, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-5

Sample No.: 261683

MACTEC ENGINEERING. AND CONSULTING, INC.

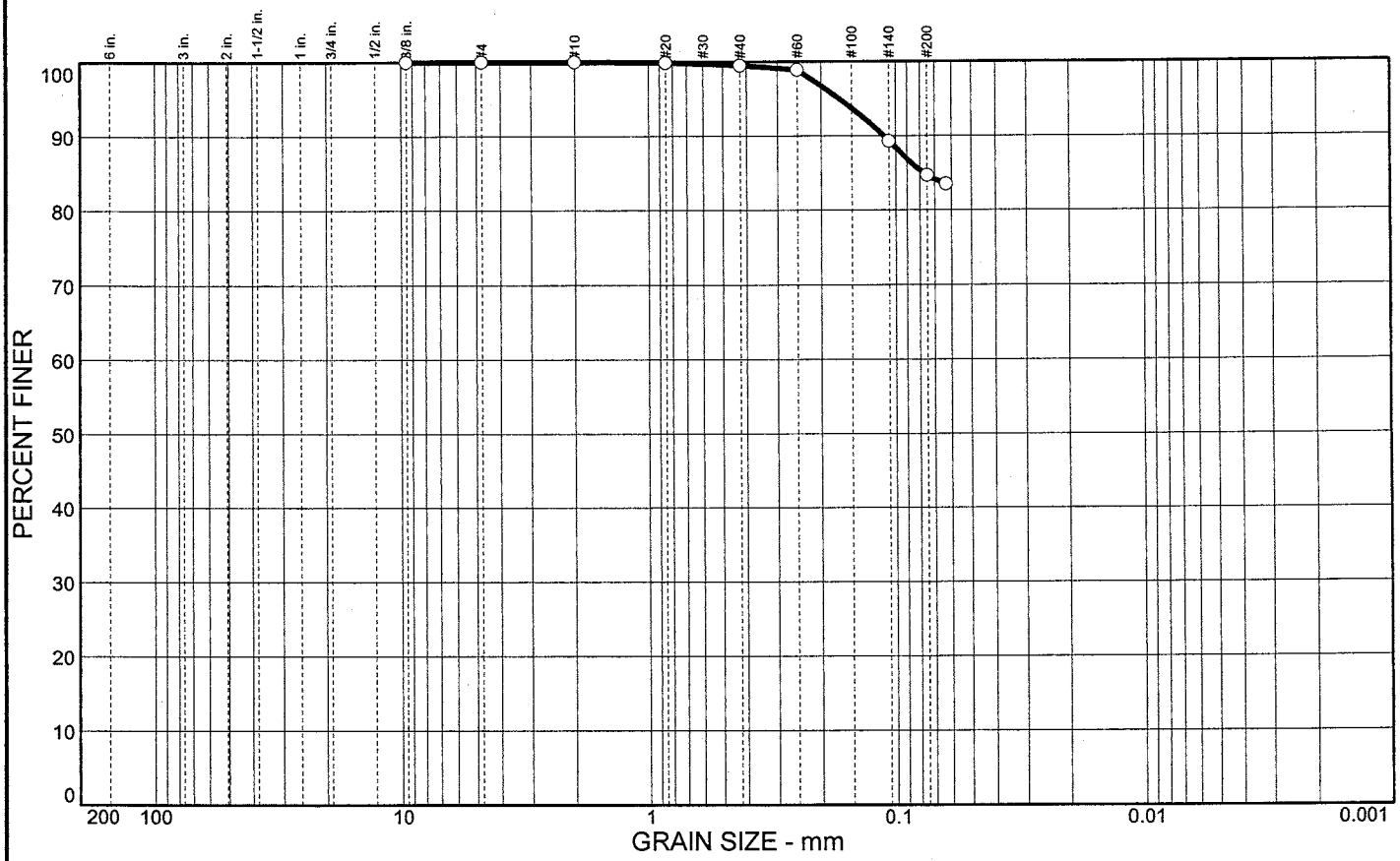
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			15.3	84.7		CH	A-7-5(117)	59	174

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
GRAIN SIZE			
D_{60}			
D_{30}			
D_{10}			
COEFFICIENTS			
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.9		
#140	89.3		
#200	84.7		
#230	83.5		

SOIL DESCRIPTION

○ CLAY, little fine quartz sand, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-6

Sample No.: 261685

MACTEC ENGINEERING. AND CONSULTING, INC.

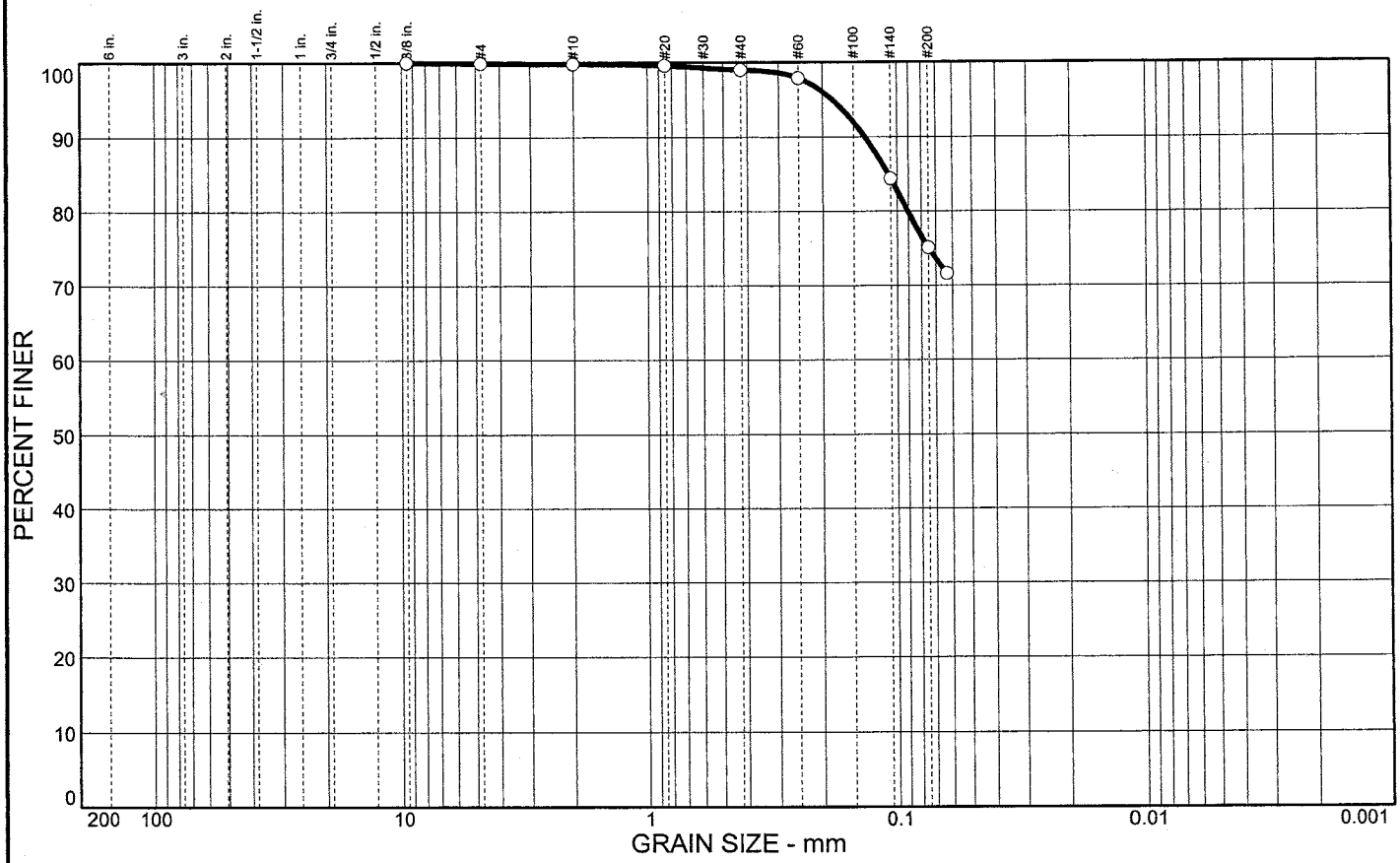
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.1	24.8	75.1		CH	A-7-5(67)	49	128

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}			
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	99.9		
#10	99.8		
#20	99.6		
#40	99.0		
#60	97.9		
#140	84.4		
#200	75.1		
#230	71.6		

SOIL DESCRIPTION

○ CLAY, little fine quartz sand, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-7

Sample No.: 261685

MACTEC ENGINEERING. AND CONSULTING, INC.

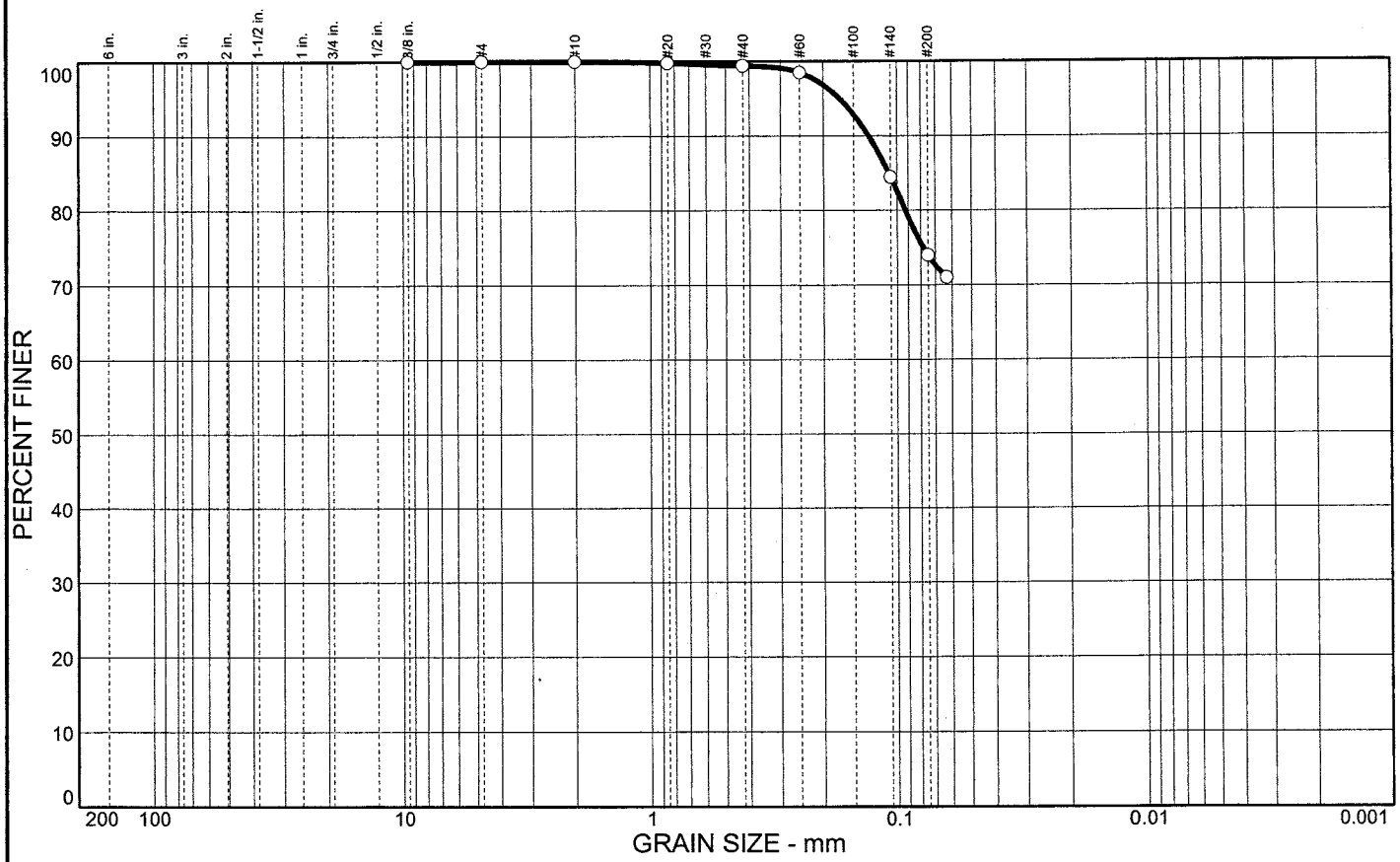
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			26.0	74.0		CH	A-7-5(63)	45	121

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}			
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.4		
#60	98.5		
#140	84.5		
#200	74.0		
#230	71.0		

SOIL DESCRIPTION

○ CLAY, little fine quartz sand, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-8

Sample No.: 261687

MACTEC ENGINEERING. AND CONSULTING, INC.

Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

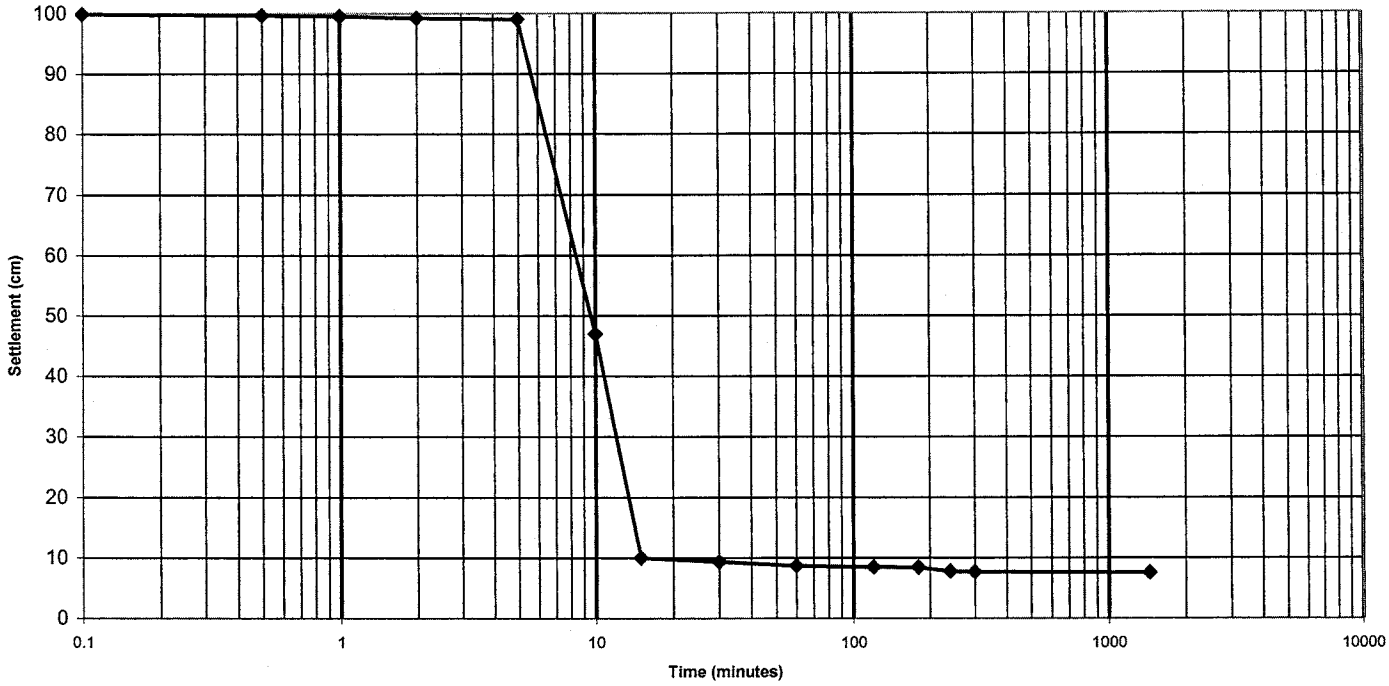
Reviewed By: B.B

MACTEC

REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION RS-KB04
SAMPLE NO: 261688
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	30	9.4
0.5	99.7	60	8.7
1	99.5	120	8.5
2	99.2	180	8.4
5	99.0	240	7.8
10	47.0	300	7.7
15	10.0	1440	7.6

Final Concentration: 1315.8 g/L

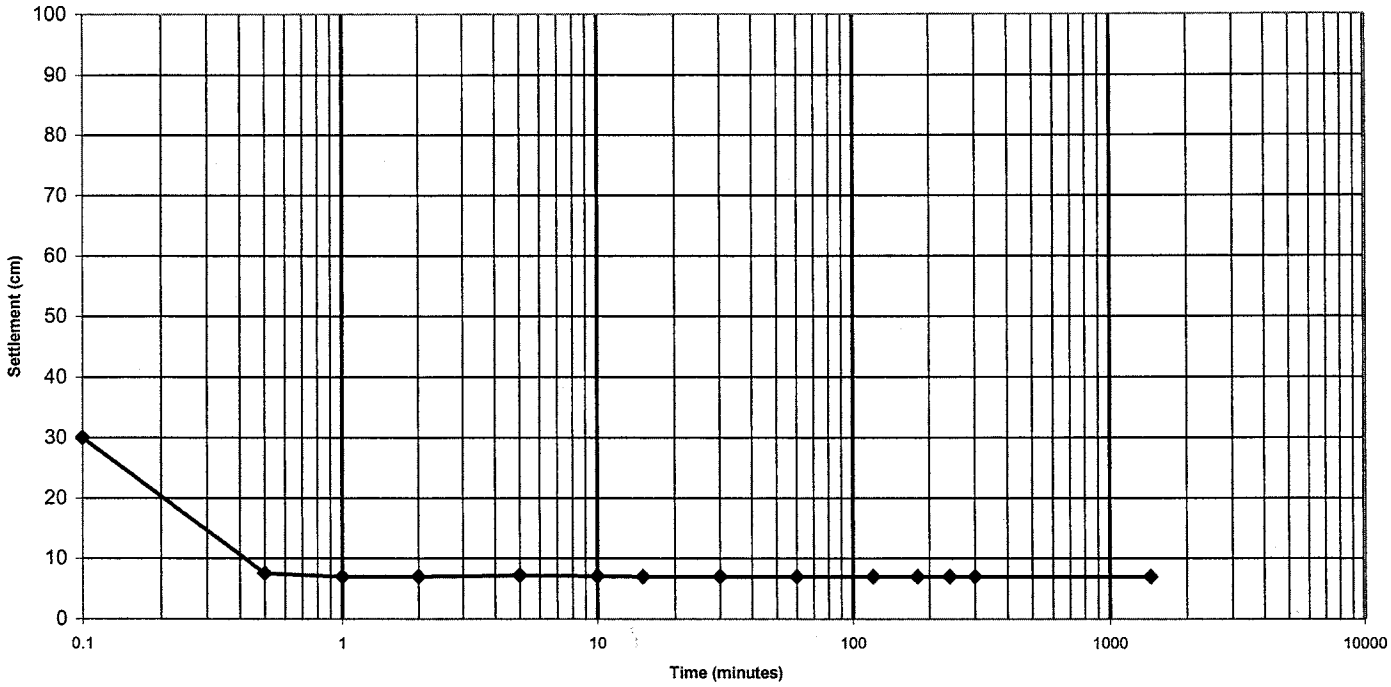
MACTEC Engineering and Consulting, Inc.
3901 Carmichael Avenue
Jacksonville, Florida 32207
(904) 396-5173

MACTEC

REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-1
SAMPLE NO: 261679
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	30.0	30	7.0
0.5	7.5	60	7.0
1	7.0	120	7.0
2	7.0	180	7.0
5	7.2	240	7.0
10	7.1	300	7.0
15	7.0	1440	7.0

Final Concentration: 1428.6 g/L

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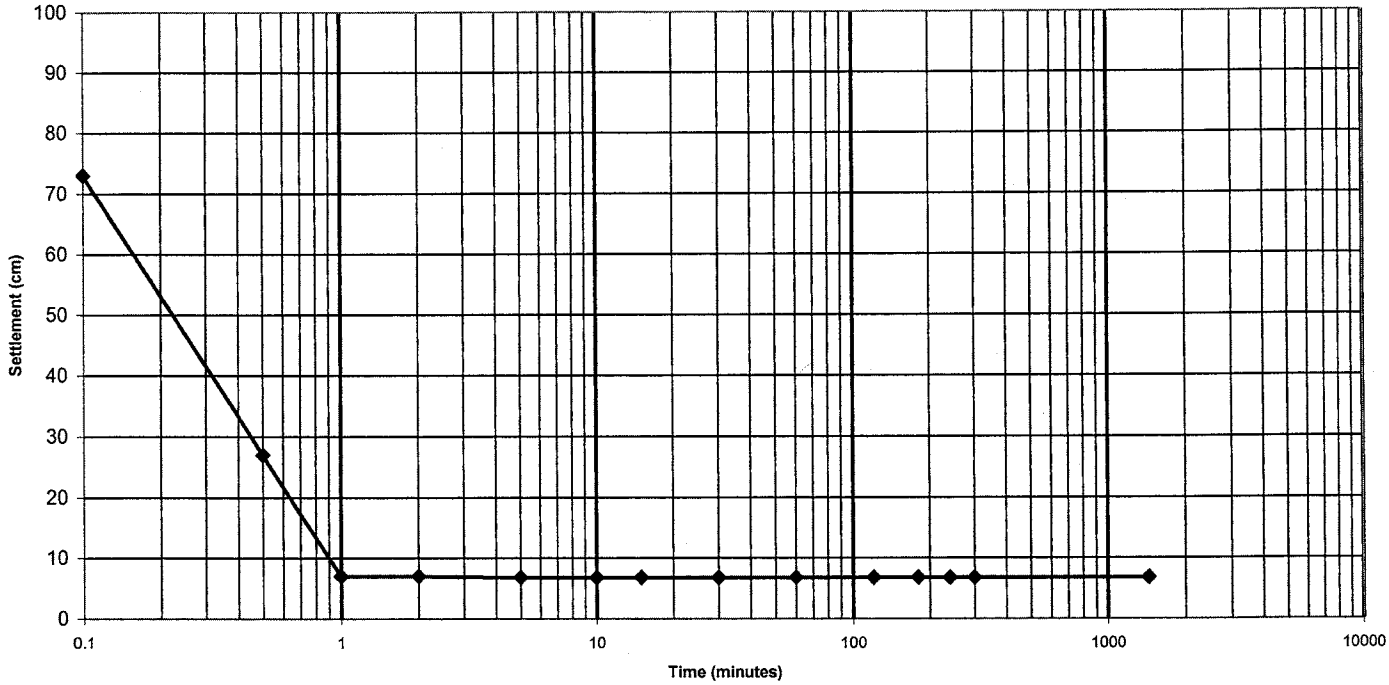
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-2
SAMPLE NO: 261680
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	73.0	30	6.8
0.5	27.0	60	6.8
1	7.0	120	6.8
2	7.0	180	6.8
5	6.8	240	6.8
10	6.8	300	6.8
15	6.8	1440	6.8

Final Concentration: 1470.6 g/L

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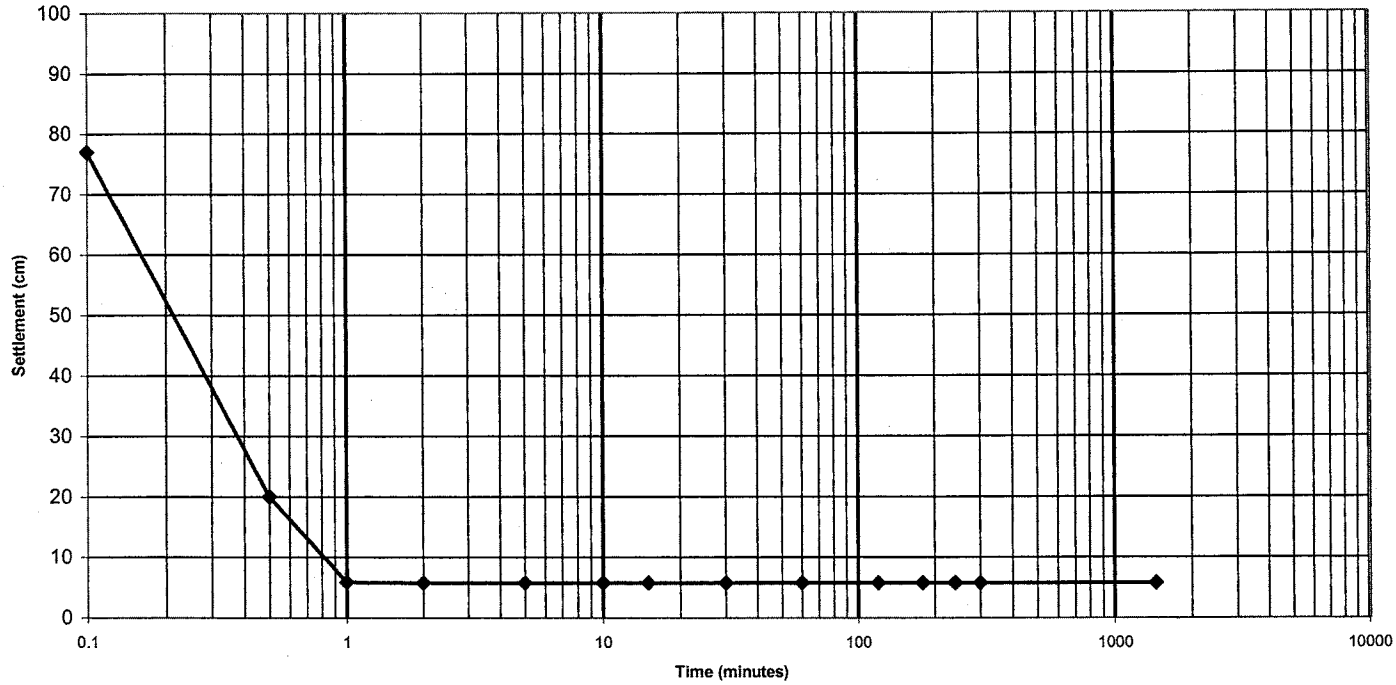
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-3
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261681
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	77.0	30	5.8
0.5	20.0	60	5.8
1	5.9	120	5.8
2	5.8	180	5.8
5	5.8	240	5.8
10	5.8	300	5.8
15	5.8	1440	5.8

Final Concentration: 1724.1 g/L

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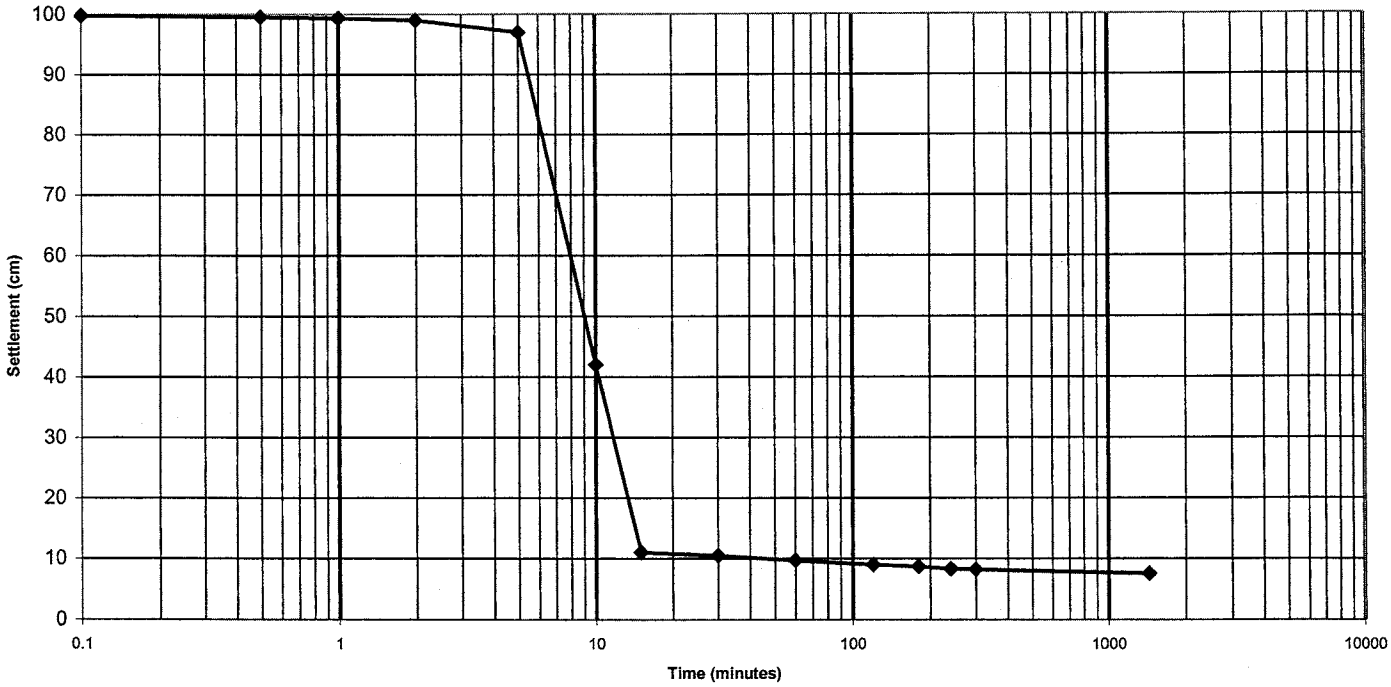
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-4
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261682
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	30	10.5
0.5	99.5	60	9.7
1	99.3	120	9.0
2	99.0	180	8.7
5	97.0	240	8.3
10	42.0	300	8.2
15	11.0	1440	7.6

Final Concentration: 1315.8 g/L

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(904) 396-5173

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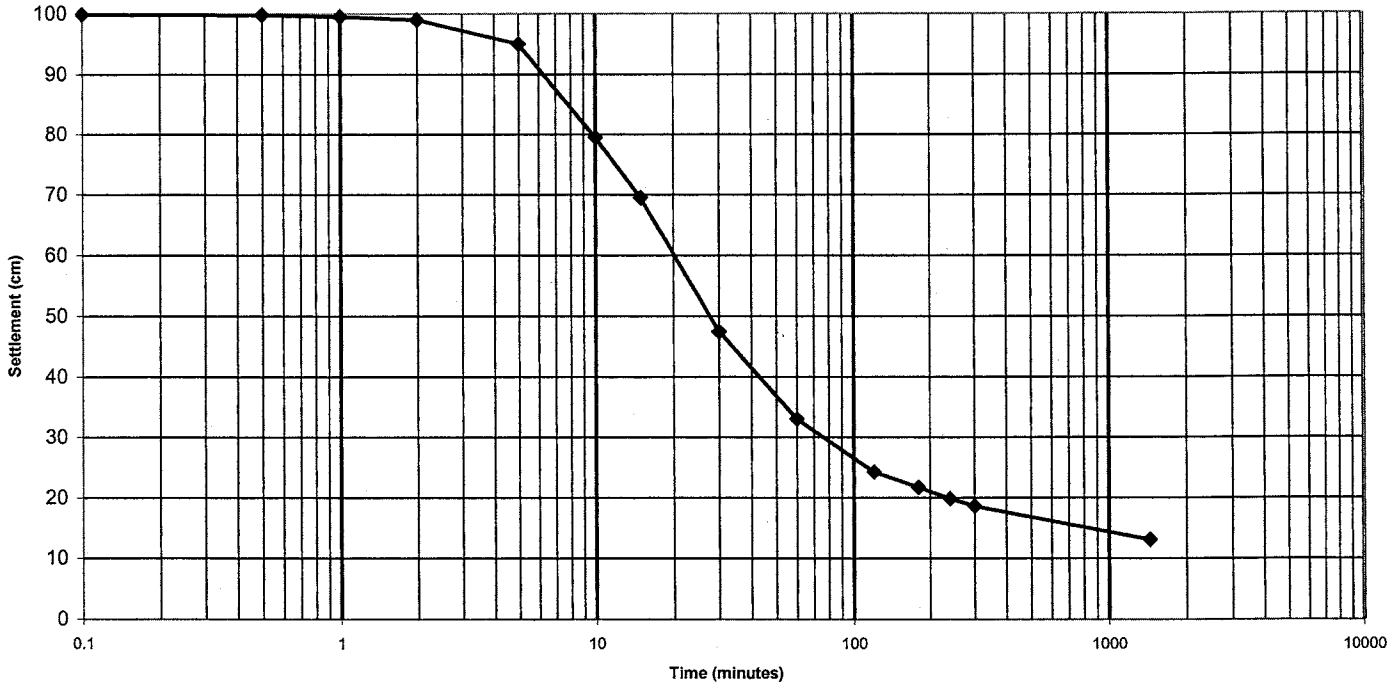
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-5
SAMPLE NO: 261683
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	30	47.5
0.5	99.8	60	33.0
1	99.5	120	24.2
2	99.0	180	21.7
5	95.0	240	19.8
10	79.5	300	18.6
15	69.5	1440	13.1

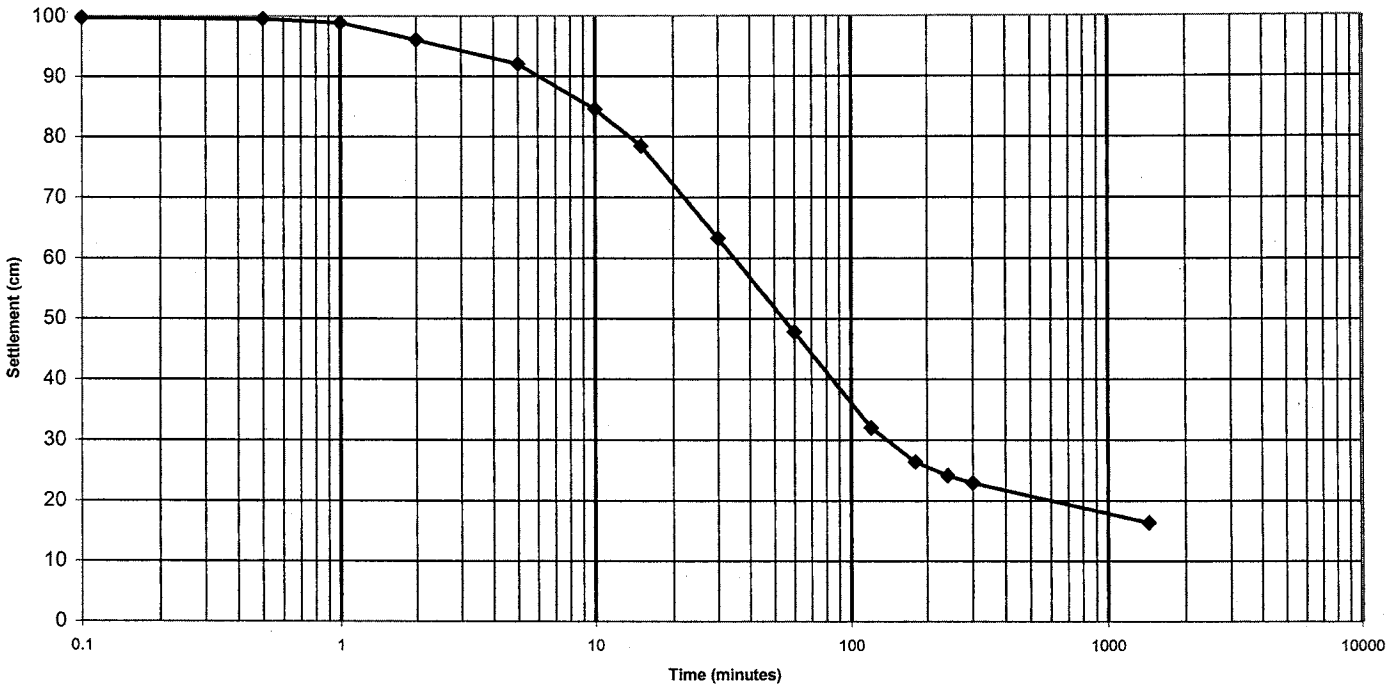
Final Concentration: 763.36 g/L

MACTEC Engineering and Consulting, Inc.
3901 Carmichael Avenue
Jacksonville, Florida 32207
(904) 396-5173

MACTEC

REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-6
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261685
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	30	63.3
0.5	99.5	60	47.8
1	98.9	120	32.0
2	96.0	180	26.4
5	92.0	240	24.1
10	84.5	300	22.9
15	78.5	1440	16.3

Final Concentration: 613.5 g/L

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3901 Carmichael Avenue
Jacksonville, Florida 32207
(904) 396-5173

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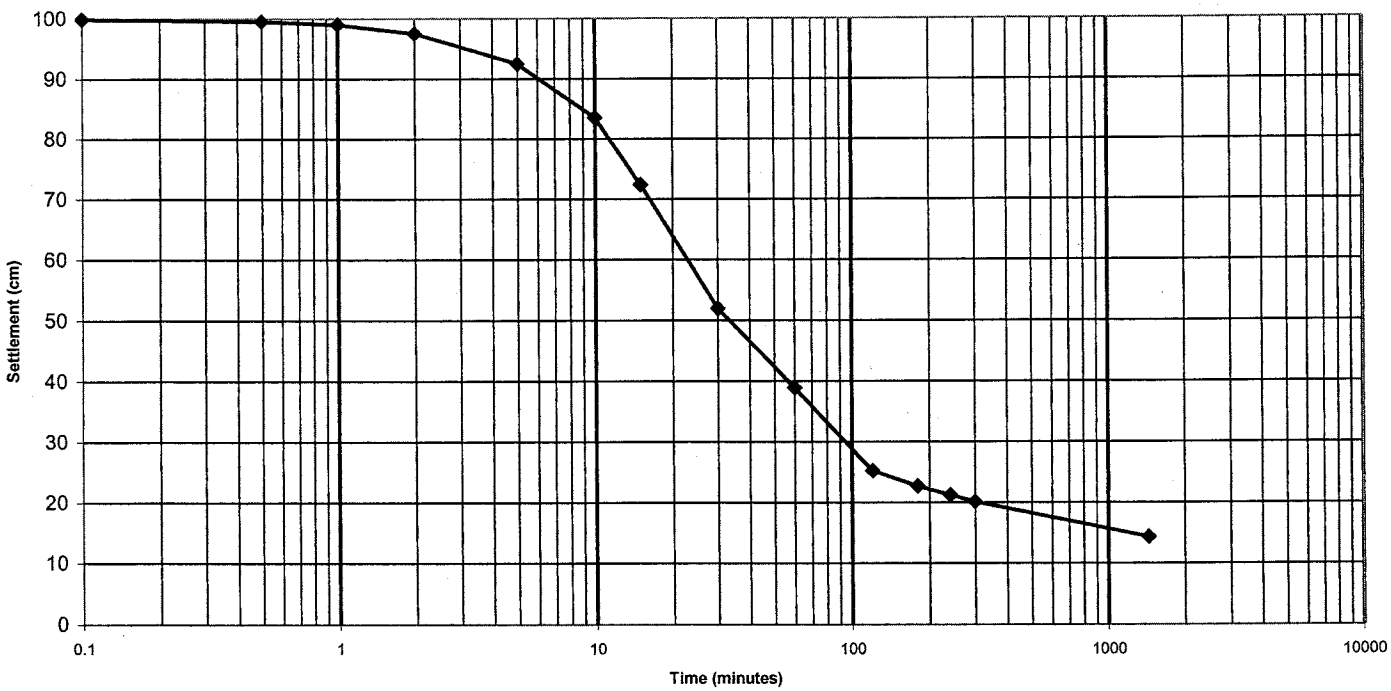
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-7
SAMPLE NO: 261686
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	30	52.0
0.5	99.5	60	38.9
1	99.0	120	25.2
2	97.5	180	22.7
5	92.5	240	21.2
10	83.5	300	20.1
15	72.4	1440	14.3

Final Concentration: 699.3 g/L

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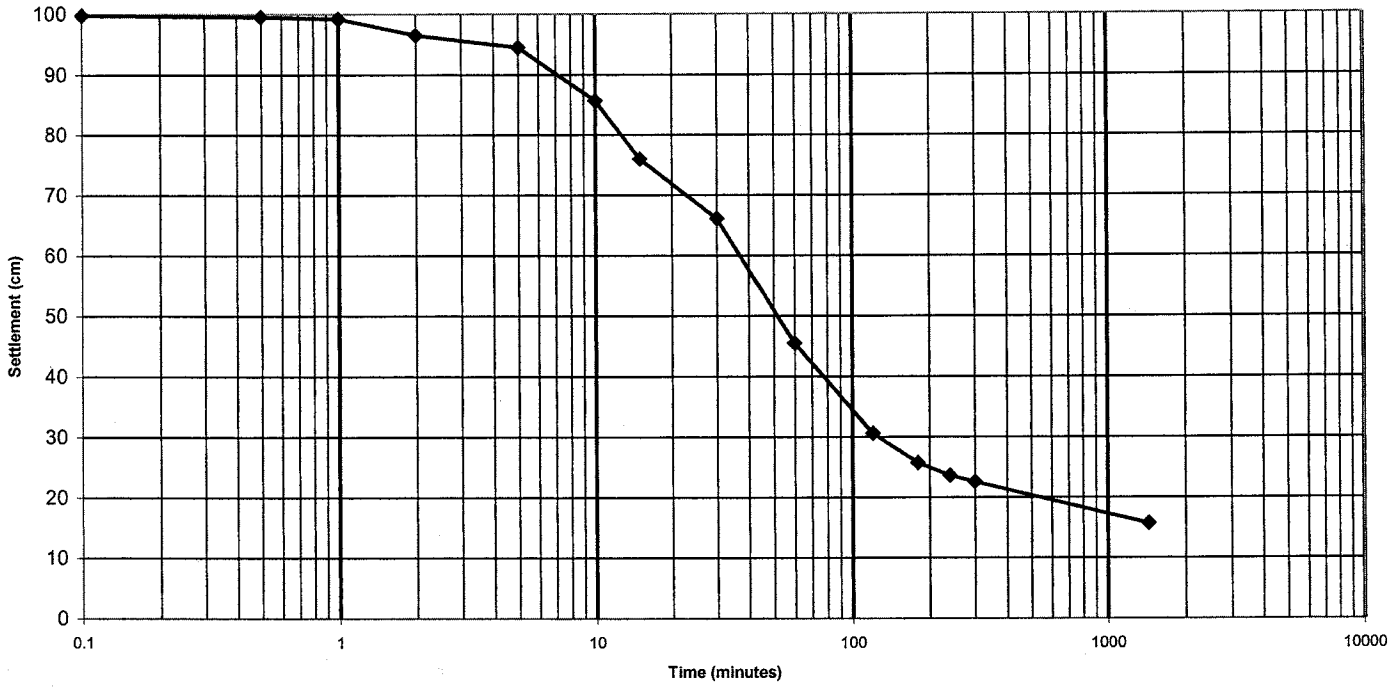
3901 Carmichael Avenue
Jacksonville, Florida 32207
(904) 396-5173

MACTEC

REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-8
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261687
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	30	66.1
0.5	99.5	60	45.5
1	99.2	120	30.6
2	96.5	180	25.7
5	94.5	240	23.6
10	85.7	300	22.5
15	76.0	1440	15.7

Final Concentration: 636.94 g/L

MACTEC Engineering and Consulting, Inc.
3901 Carmichael Avenue
Jacksonville, Florida 32207
(904) 396-5173

MACTEC

Project: USACOE Kings Bay 2004

Project Number: 6063-04-0017-0900

Client: PPB Environmental

Date: December 22, 2004

Specific Gravity Calculation: DryWt/(DryWt+(PycCalib-PcySoil)

Sample	Pycnometer	Cal. Temp	Cal. Den.	Pycnometer Dry	Pycnometer Full	Temp	Density	Calibrated Pycnometer Wt	Specific Gravity
E-KB04-1	c	21.44	0.99791	181.57	680.49	19.0	0.9984	680.74	2.726
E-KB04-2	jg	21.44	0.99791	173.33	672.19	19.0	0.9984	672.44	2.704
E-KB04-3	f	21.44	0.99791	171.52	670.33	18.8	0.9985	670.60	2.698
E-KB04-4	jt	21.44	0.99791	182.87	681.76	19.0	0.9984	682.01	2.664
E-KB04-5	l	21.44	0.99791	166.81	665.50	19.0	0.9984	665.75	2.633
E-KB04-6	lb	21.44	0.99791	181.30	680.18	19.0	0.9984	680.43	2.577
E-KB04-7	mc	21.44	0.99791	176.36	675.21	19.0	0.9984	675.46	2.586
E-KB04-8	o	21.44	0.99791	176.52	675.19	19.0	0.9984	675.44	2.584
RS-KB04	P	21.44	0.99791	170.09	668.81	19.0	0.9984	669.06	2.682
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A

Fine Material

SSD Wt	Dry Wt	Pyc+Sample Wt	Tare #	Tare Wt	Tare+Sample
	91.22	738.49		223.26	314.48
	104.36	738.2		222.76	327.12
	167.03	775.73		223.51	390.54
	153.36	777.79		223.45	376.81
	106.65	731.9		223.98	330.63
	45.52	708.28		222.71	268.23
	57.11	710.49		222.64	279.75
	57.76	710.85		231.26	289.02
	154.45	765.93		121	275.45
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	0				

King's Bay 2004 Section 103 Sediment Characterization

Prepared for

United States Army Corps of Engineers
Jacksonville District
701 San Marco Blvd
CESAJ-CT
Jacksonville, Florida 32207-8175

Prepared by

PPB Environmental Laboratories, Inc.
6821 S.W. Archer Road
Gainesville, Florida 32608

February 2005

DACW17-03-D-0016

Task Order No. 0010

APPENDIX A

King's Bay 2004
Sampling Plan and Protocol

KINGS BAY 103 EVALUATION – 2004
SAMPLING PLAN AND PROTOCOL

Introduction

The 103 evaluation of the Kings Bay maintenance dredging considers potential dredged material (DM) from the portion of Kings Bay that are proposed for disposal in the Fernandina Ocean Dredged Material Disposal Sites (ODMDS). The FY05 maintenance dredge effort includes routine maintenance dredging of approximately 970,000 cy from the entrance channel from Cut - 1, Sta. 100+00 to 340+00 with beach, nearshore, and ocean placement to a project depth of 51 feet(46ft. plus 3ft. required + 2ft. allowable over depth).

Project Description

Evaluation of the Kings Bay dredge material (DM) for ocean disposal considers maintenance dredging for Kings Bay, located near the City of Fernandina, Nassau County, Florida. Maps and Examination Survey will be provided under separate cover by CESAJ-PD-EG.

The Kings Bay project is located in Nassau County at the entrance to the St. Marys River. The project provides access to marine traffic using terminal facilities located in the Cities of Fernandina, Florida, St. Marys, Georgia and naval vessels using facilities at the Kings Bay Naval Station.

The existing project is authorized for depths of 46 feet plus 3 feet of required advance dredging and 2 feet of allowable over depth (see Examination Survey at enclosure 3). The total amount to be dredged to maintain the existing channels is estimated at 810,000 cubic yards per year. However volume varies considerably from year to year. The next projected dredging event is scheduled for late 2004 and will include 970,000 cubic yards of material. Dredged Material from this project consists of sand, gravel, silts and clays (see core boring data at enclosure 4). All DM from this project is subject to disposal in the Fernandina Ocean Dredged Material Disposal Site (ODMDS).

Previous dredging and disposal of Kings Bay sediments in the Fernandina ODMDS including both maintenance and new work;

Year	volume (cy)
1994	1,490,600
1995	1,292,100
1996	915,500
1997	420,600

1998	1,222,000
1999	650,100
2000	1,049,300
2001	771,900
2002	505,200
2003	397,600

Evaluation Needed

This sampling plan and protocol defines the work necessary to obtain an EPA concurrence for disposal of dredged material from Kings Bay. This project was tested for 103 concurrence in accordance with the 1991 "Green Book". EPA granted 103 concurrence on 22 Feb 2002. The EPA concurrence expires on 22 Feb 2005. This sampling plan and protocol defines the work necessary to obtain a new EPA concurrence for disposal of dredged material Kings Bay. The new testing will be done in accordance with the 1991 "Green Book"

A brief review of the steps leading to this decision is provided.

Tier I - Review of the available information for these projects indicates that chemical and bio-toxicity data for the harbor are less than three years old and considered adequate. New chemical data is needed to validate existing data and ensure that no changes have occurred since 2002. Therefore the evaluation moved to Tier II.

Tier II Evaluation - The proposed contaminants of concern for this project are listed below. The list includes the minimum requirements according to the regulations as well as other common contaminants.

Metals

Aluminum (sediment only)
Antimony
Arsenic
Cadmium
Chromium
Copper
Iron (sediment only)
Lead
Mercury
Nickel
Silver
Zinc

Selenium and thallium are not considered contaminates of interest. These metals have not been found in Florida marine sediments in significant quantities. In addition there are no industrial activities in the Kings Bay area that would be likely sources of these metals.

Beryllium is not considered a contaminate of interest. Beryllium is used in highly specialized nuclear and aerospace manufacturing processes, none of which have been, or currently are located within the watershed of Kings Bay.

Organic Chemicals

Chlorinated Hydrocarbon Pesticides

Aldrin
Chlordane
4,4'-DDT
4,4'-DDD
4,4'-DDE
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Heptachlor
Heptachlor Epoxide
Lindane& derivatives
Methoxychlor
Toxaphene

Polychlorinated Biphenyls (PCBs)

PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1248
PCB-1254
PCB-1260
PCB Congeners (Summation and Highest Priority list of congeners per Table 9.3 of the Green Book)

Polycyclic Aromatic Hydrocarbons (PAHs)

Acenapthene
Acenaphthylene
Anthracene
Benzo (a) Anthracene
Benzo (a) Pyrene
Benzo (g,h,i) Perylene
Benzo (k) Fluoranthene
Benzo (b) Fluoranthene
Chrysene
Dibenzo (a,h) Anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd) Pyrene
Methylnaphthalene
Naphthalene
Phenanthrene
Pyrene

Other

Total Ammonia
Cyanide
Oil and Grease
Total Organic Carbon (T.O.C.)
Total Organic Tin
Total Sulfides

Dioxin is not considered to be a contaminant of concern. Although there are paper mills located along St. Marys River they are closely monitored for dioxin discharges and maintain a very low level in the effluent. The strong current in the river combined with regular maintenance dredging makes it highly unlikely there would be any significant levels of dioxin in these sediments. Therefore dioxin has not been included.

Tier III Evaluation – No Tier III testing is proposed.

Testing for the Kings Bay project shall be provided by PPB Environmental of Gainesville, Florida and their subcontractors under a current contract with the Jacksonville District Corps of Engineers.

A plan for sampling and testing of representative sediment samples is detailed below.

Sample Plan Design

Sample Station Selection. In selecting sample stations, consideration is given to the location of shoals, the types of sediment, and areas that are likely to be contaminated, such as areas near point source discharges, or areas likely to be affected by non-point source discharge. Also considered are the influence of currents, geographical influences on different areas of the project and so forth. These points have been considered in this review.

When appropriate, sample stations were picked at random.

Eight (8) sample zones have been selected as shown on the separately provided Maps and Examination Survey. These zones shall be numbered E-KB04-1 through 8.

Sediments are fairly evenly distributed along the length of the project. Each zone is approximately 3000 feet in length.

Zone 1 Cut 1, Stations 100 to 130
Zone 2 Cut 1, Stations 130 to 160
Zone 3 Cut 1, Stations 160 to 190
Zone 4 Cut 1, Stations 190 to 220
Zone 5 Cut 1, Stations 220 to 250
Zone 6 Cut 1, Stations 250 to 280
Zone 7 Cut 1, Stations 280 to 310
Zone 8 Cut 1, Stations 310 to 340

In all zones five sub-samples shall be collected. Sub-sample locations are evenly distributed with two on each side of the channel and one in the middle of each zone. The sub-samples from each zone shall be homogenized and tested as a single sample. Sub-samples shall be numbered E-KB04-Z-1 through 5 with "Z" being the zone number (i.e. in zone 1 sub-sample 1 would be identified as E-KB04-1-1).

Reference Station. An area reference shall be composited from two sub-samples that shall be taken from one mile north of the north edge of the ODMDS (30d34.5'N /81d22.02'W) and one mile south of the south edge of the ODMDS (30d30.48'N/ 81d21.78'W). The reference stations shall be numbered RS-KB04A and B. The sub-samples shall be homogenized and tested as a single sample numbered RS-KB04

The locations of stations shall be established using GPS.

Where sediments are of sufficient depth, approximately four feet or more, samples shall be taken using a Vibracore. Vibracore samples shall be taken from the benthic surface to the project dredge depth or refusal. Where the depth of sediment to be sampled is insufficient to

require the use of the Vibracore, or where the water is too deep to allow the use of the Vibracore, the samples shall be taken with a box core, gravity core or other appropriate sampling method. Reference sub-samples shall be taken by grab. The field collection contractor may change the sampling method as required by conditions in the field. Sufficient sediment and water samples shall be taken during fieldwork to run sediment and water chemistry as well as bioassays for five species and bioaccumulation for two species, and to run a re-test of the reference station sediments if required.

QA/QC. One sample zone shall be sampled in duplicate for all sediment and elutriate chemical analysis. The zone to be duplicated shall be selected at random by the field collection contractor. The contractor shall run spiked samples on request or provide splits of samples under a separate delivery order.

Hydrographic Measurements. Collection of sediment and water samples shall include the following information on station conditions and in situ hydrographic measurements at surface, mid-water column and bottom:

Water temp.	Salinity	DO
pH	Turbidity (NTU's)	Conductivity
Water depth	Tidal Cycle	Sea State
	Weather	

A list of sample stations and locations shall be provided to the field collection contractor during the pre-work planning meeting. Field notes shall be provided to the District upon the completion of fieldwork.

Test Parameter	Test Method	Detection Limit
1. Grain Size Analysis	Plumb 1981	1.0 % (phi and mm
2. Total Solids/ Water Content	Plumb 1981	1.0% solids
3. Specific gravity	ASTM D854	
4. Atterburg limits	ASTM D4318	
5. Settling rates	Corps SAD Lab Method	

Sediment chemical analysis. Bulk sediment tests for samples from each station shall be performed for the following constituents using the methods and detection limits specified:

Test Parameter	Method to be Used	Detection Limit
		(dry wgt basis)

1. Metals

a. Aluminum	ICP,	0.5 ppm
b. Antimony	6010	0.3 ppm
c. Arsenic	7061	0.5 ppm
d. Cadmium	ICP or 7131	0.1 ppm
e. Chromium	ICP or 7191	0.2 ppm
f. Copper	ICP	0.1 ppm
g. Iron	ICP	1.5 ppm
h. Lead	ICP or 7421	0.1 ppm
i. Mercury	7471	0.05 ppm
j. Nickel	ICP or 7191	0.2 ppm
k. Silver	ICP or 7761	0.1 ppm
l. Zinc	ICP	0.2 ppm

Note: Methods ending in 0 are flame atomic absorption (AA). Methods ending in 1 are Graphite furnace AA or cold vapor for mercury. 200.7 indicate inductively coupled plasma (ICP). For this work, flame AA is the least sensitive method, ICP next and furnace AA the most Testing sensitive.

2. Organics

a. Pesticides and PCB's

1) Aldrin	8080	0.020 ppm
2) Chlordane	8080	0.025 ppm
3) 4,4'-DDT	8080	0.020 ppm
4) 4,4'-DDD	8080	0.020 ppm
5) 4,4'-DDE	8080	0.020 ppm
6) Dieldrin	8080	0.020 ppm
7) Endosulfan I	8080	0.025 ppm
8) Endosulfan II	8080	0.025 ppm
9) Endosulfan Sulfate	8080	0.025 ppm
10) Endrin	8080	0.020 ppm
11) Endrin Aldehyde	8080	0.020 ppm
12) Heptachlor	8080	0.020 ppm
13) Heptachlor Epoxide	8080	0.020 ppm
14) Lindane & deriv	8080	0.020 ppm
15) Toxaphene	8080	0.030 ppm
16) PCB-1248	8080	0.010 ppm

17) PCB-1254	"	"
18) PCB-1016	"	"
19) PCB-1221	"	"
20) PCB-1232	"	"
21) PCB-1242	"	"
22) PCB-1260	"	"

23) PCB Congeners (Summation and Highest Priority lists of congeners per Table 9.3 of the Green Book)

b. Polynuclear Aromatic Hydrocarbons (PAHs) - all by 8100 at 0.020 ppm

1) Acenaphthene
2) Acenaphthylene
3) Anthracene
4) Benzo (a) Anthracene
5) Benzo (a) Pyrene
6) Benzo (b) Fluoranthene
7) Benzo (k) Fluoranthene
8) Benzo (g,h,i) perylene
9) Chrysene
10) Dibenzo (a,h) Anthracene
11) Fluoranthene
12) Fluorene
13) Indeno(1,2,3-cd) Pyrene
14) 1-Methylnapthalene
15) 2-Methylnapthalene
16) Naphthalene
17) Phenanthrene
18) Pyrene

c. Total Ammonia	Plumb 1981	0.10 mg/kg
d. Cyanide	9010/9012	1.0 mg/kg
e. Oil and Grease (wet wt.)	413.2	1.0 ppm
f. Total Organic Carbon (TOC)	9060	0.1 %
g. Total Sulfides	9030, Plumb 1981	0.20 ppm

3. Total Organic Tin (run for all sample and reference stations): Mono, di and tribuytal tin by Stephensen and Smith, 1988 or Uhler and Durrel, 1989 at a method detection limit of 0.01 mg/kg.

Based on bulk sediment chemical results elutriates/tissues shall be tested for only those chemical compounds that are present at levels high enough to be of concern.

Chemical Analysis of Elutriates. Chemical analysis of elutriates from samples from each station for which chemical analysis shall be performed for the compounds listed. Water for elutriate preparation shall be obtained from a point in the approximate center of the Kings Bay project sampling area. In addition a water sample taken at the reference site shall be analyzed for the compounds listed. Elutriate chemical analysis results shall be evaluated using the ADDAMS model in accordance with the requirements of the Green Book. ADDAMS model results shall be addressed in the executive summary of the final report and included as an appendix to the final report.

Test Parameter	EPA Method	Detection Limit
1. Metals		
a. Antimony	200.7/610	3.5 ppb
b. Arsenic	7061	1.0 ppb
c. Cadmium	7131	0.5 ppb
d. Chromium	7191	0.5 ppb
e. Copper	220.7-furnace AA	2.5 ppb
f. Lead	7421	2.5 ppb
g. Mercury	7471	0.2 ppb
h. Nickel	249.2	0.2 ppb
i. Silver	272.2-furnace AA	1.0 ppb
j. Zinc	200.7 ICP	1.5 ppb
2. Organics		
a. Pesticides and PCB's		
1) Aldrin	8080	0.020 ppm
2) Chlordane	8080	0.025 ppm
3) 4,4'-DDT	8080	0.020.ppm
4) 4,4'-DDD	8080	0.020 ppm
5) 4,4'-DDE	8080	0.020 ppm
6) Dieldrin	8080	0.020 ppm
7) Endosulfan I	8080	0.025 ppm
8) Endosulfan II	8080	0.025 ppm
9) Endosulfan		

Sulfate	8080	0.025 ppm
10) Endrin	8080	0.020 ppm
11) Endrin Aldehyde	8080	0.020 ppm
12) Heptachlor	8080	0.020 ppm
13) Heptachlor Epoxide	8080	0.020 ppm
14) Lindane & deriv	8080	0.020 ppm
15) Toxaphene	8080	0.030 ppm
16) PCB-1248	Tetra Tech 1986 & NOAA 1989	0.010 ppm
17) PCB-1254	"	"
18) PCB-1016	"	"
19) PCB-1221	"	"
20) PCB-1232	"	"
21) PCB-1242	"	"
22) PCB-1260	"	"

23) PCB Congeners (Summation and Highest Priority List of Congeners per Table 9.3 of the Green Book)

b. Polynuclear Aromatic Hydrocarbons (PAHs) - all by 8100 at 0.020 ppm

1) Acenapthene
2) Acenaphthylene
3) Anthracene
4) Benzo (a) Anthracene
5) Benzo (a) Pyrene
6) Benzo (b) Fluoranthene
7) Benzo (k) Fluoranthene
8) Benzo (g,h,i) perylene
9) Chrysene
10) Dibenzo (a,h) Anthracene
11) Fluoranthene
12) Fluorene
13) Indeno(1,2,3-cd) Pyrene
14) Naphthalene
15) Phenanthrene
16) Pyrene

c. Total Ammonia	Plumb 1981	0.10 mg/kg
d. Cyanide	9010/9012	1.0 mg/kg

e. Oil and Grease	413.2	1.0 ppm
f. Total Organic Carbon (TOC)	9060	0.1 %
g. Total Sulfides	9030,Plumb1981	0.20 ppm

3. Total Organic Tin: Run for mono, di and tribuytal tin by Stephensen and Smith, 1988 or Uhler and Durrel, 1989 at a method detection limit of 0.1 ppm.

Chemical data shall be obtained and transmitted to the Fernandina District as quickly as possible to allow for review and subsequent decision on the need for continuing with bioassays and bioaccumulation tests.

ANALYTICAL METHODOLOGY

Laboratory analyses shall be conducted in accordance with the following:

a. Sediment and Elutriate Analysis.

(1) References.

(i) Procedures for Handling and Chemical Analysis of Sediment and Water Samples. USEPA/CE 81-1, May 1981, USAE Waterways Experiment Station, Vicksburg, Mississippi.

(ii) Standard Methods for the Examination of Water and Wastewater. 20th Edition, 1996, American Public Health Association (or latest edition).

(iii) Methods for Chemical Analysis of Water and Wastes (EPA 1983, and subsequent updated).

(iv) Test Methods for evaluating Solid Wastes (EPA 1986, and subsequent updates).

(v) Regional Implementation Manual – Requirements and Procedures for Evaluation of Ocean Disposal of Dredged Material in Southeastern Atlantic and Gulf Coastal Waters (EPA Region IV/COE South Atlantic Division 1993, and subsequent updates).

(vi) Evaluation of Dredged Material Proposed for Ocean Disposal (EPA/COE 1991, and subsequent updates).

(vii) Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual (EPA/COE 1998).

(viii) Method for Semivolatile Organic Priority Pollutants in Fish (Battelle 1985, Final Report, EPA Contract No. 68-03-1760).

QUALITY CONTROL

a. The laboratory shall maintain accreditation under the National Environmental Laboratory Accreditation Conference/Program (NELAC/P)or have FDHR certification. Bioassays and tissue analysis however are not included in State approval process.

b. Contractors shall have an established quality control program which is based on Environmental Protection Agency's quality control program as outlined in Handbook for Analytical Quality Control in Water and Wastewater Laboratories, USEPA 600/4-79-019, March 1979, EPA Office of Research and Development, Cincinnati, Ohio and complies with the requirements of the Department of Defense Quality Systems Manual for Environmental Laboratories, October, 2000.

c. Upon completion of the analyses, the laboratory shall prepare a quality control report which includes the precision and accuracy of data generated on the analyzed samples.

d. As an absolute minimum, the following quality control measures shall be taken with each group of samples analyzed:

(1) Reagent blanks shall be run.

(2) Duplicate analyses shall be made on 10% of all samples, unless replicates are already required in the work order, and precision data shall be reported in the quality control report.

(3) At least one audit or reference sample (EPA, NBS or other EPA acceptable source) shall be run and reported in the quality control report. This audit sample (water or sediment) shall be within the same concentration range as the samples that are being analyzed.

(4) Spiked samples shall be run for all parameters in order to address analytical accuracy. At least 20 percent of the samples must be spiked with an appropriate standard in order to address accuracy. The concentration of the spike shall be large enough to increase the analyst's concentration by at least 50%, but not more than 200% above the original sample concentration. If the sample concentration is less than

three times that of the analyte detection limit, then a spike of two to three times that detection limit is appropriate.

(5) Printouts from all AA and GC analyses shall be kept on file in the event that any problems with the data arise.

(e) A quality control plan (QCP) shall be submitted by the Contractor with their proposal to accomplish the work described in the scope of Work. The QCP should include:

(1) Listings of all analytical equipment and sampling devices to be used in the study, methods for calibrating in the field and lab, precision and accuracy standards, maintenance schedules, record keeping methods, and personnel responsible.

(2) Field survey procedures, including boat to be used, description of field notes to be taken, and sample collection, processing, and storage techniques. Particular attention should be given to field sampling and handling procedures to avoid contamination of water and sediment samples.

(3) Labeling system to be employed to ensure proper tracking of samples from collection through analysis to listing in final report.

(4) Laboratory analytical techniques and quality control procedures. Personnel responsible for accurately processing samples.

REPORT

The Contractor shall prepare a report as set forth below:

a. Report shall consist of a discussion of methods used to collect and analyze samples, sampling conditions (date and time of sample collection, tidal stage, weather conditions) and results of analyses. This report shall also contain the quality control report specified in paragraphs above.

b. Text material shall be typed on good quality 8_ by 11 inch bond paper with a 1_ binding margin on the left side, _ inch on the right and 1 inch at the top and bottom.

c. Drawings or plates shall be no larger than 20 inches by 11 inches with sufficient margin for binding on the left side and shall include a geographical scale.

d. All Final Reports shall be typed, and one camera-ready original plus four copies shall be furnished as specified below. In addition one electronic copy shall be

provided in Microsoft Word format on a CDROM. One additional electronic copy shall be provided in Adobe Acrobat pdf format on a CDROM.

e. Verbal Brief. The Contractor shall prepare a verbal brief in the form of a progress review, to be submitted by phone to Corps of Engineers, Jacksonville District Office, area code 904-232-3691, after sampling and prior to completion of laboratory work.

f. Final Report. After completion of the laboratory analyses and data reduction and analysis, the Contractor shall prepare as set forth below, a final report for the project area. The final report and findings shall be objective and fully substantiated by documentation. Where full documentation is lacking, professional opinion shall be provided and qualified as such. The final report shall include the following as a minimum:

(1) Laboratory data. A scientific report of the laboratory analyses performed shall be furnished together with appropriate figures, tables, and lists of results as specified in reference 5.b.(1) above. Additional data may be requested during review by the Jaclsonville District Office, U.S. Army Corps of Engineers.

(2) Data interpretation. Based on the laboratory analyses performed under this contract, the Contractor shall prepare an interpretive report addressing Study Objectives. Report format shall follow that required by reputable and scientific periodicals with introduction, methods, results, discussion, and summary sections.

(3) Estimation of initial mixing shall be made on dredged material using the method (ADDAMS model) specified in Appendix B of the Green Book. Values to be used in calculating initial mixing zone; width and length of disposal vessel (presumed 22 x 91.5 meters), speed of disposal vessel (presumed 2.68 meters per second), and time to dump (300 seconds). Vessel volume assumed to be 1700 cubic meters.

SCHEDULE FOR WORK

ITEM	TIME FROM CONTRACT INITIATION (DAYS)
Notice of Award	0
Submit QCP	5
Begin field sampling	15
Complete field sampling	20
Chemical analysis Complete	50
Prepare and submit report	60
Final Report submitted 15 days after government review complete.	

Questions on this plan should be directed to Mr. Glenn R. Schuster [(904)232-3691] in the Corps Jacksonville District.

APPENDIX B

Chain of Custodies

ppb
ENVIRONMENTAL LABORATORIES, INC.
6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

FOR LAB USE ONLY
Subcontractor
Shipping Method

PROJECT NAME: PPB / COE
SITE NAME & ADDRESS: Kings Bay Entrance Channel
SAMPLERS: (Signature)
CONTACT PERSON: F. Johnson
BATCH # (Lab Use Only)

PRESERVATION
CF Chilled-Filtered
SF Sulfuric-Filtered
NF Nitric-Filtered
C Chilled
S Sulfuric
N Nitric
B Basic/NaOH
Z Zinc
T Thiosulfate
H HCL
Ot Other (see Remarks)

SAMPLE FIELD ID. NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	Lab I.D. Number
	12/8/04	1200		✓	E-KB04-7-5	MS	2		261686
		1210			E-KB04-7-4		1		
		1220			E-KB04-7-3		1		
		1225			E-KB04-7-1		1		
		1230			E-KB04-7-2		1		
		1400			E-KB04-6-1		2		261685
		1410			E-KB04-6-2		1		
		1420			E-KB04-6-3		1		
		1425			E-KB04-6-5		1		
		1430			E-KB04-6-4		1		
		1630			E-KB04-5-1		2		261683
		1640			E-KB04-5-2		1		
		1650			E-KB04-5-3		1		
		1700			E-KB04-5-4		1		
		1710		✓	E-KB04-5-5		1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Precleaned Containers			
	12/10/2004 0800		12/10/04 0800

Remarks and Observations

Matrix Types S Soil or Sediment, WW Wastewater, T Animal Tissue, SW Surface Water, SL Sludge or Solid Waste, MW Marine Water, GW Ground Water, DW Drinking Water, P Plant Tissue, F Filter, A Air, Ot Other (See Remarks)

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SAMPLE FIELD ID. NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Lab I.D. Number
	12/8/04	1630		✓	E-KB04-5-1 Dup	MS	2	261684
		1640			E-KB04-5-2 Dup		1	
		1650			E-KB04-5-3 Dup		1	
		1700			E-KB04-5-4 Dup		1	
		1710			E-KB04-5-5 Dup		1	
	12/9/04	0750		✓	E-KB04-4-1	MS	2	261682
		0800			E-KB04-4-2		1	
		0810			E-KB04-4-3		1	
		0815			E-KB04-4-5		1	
		0820			E-KB04-4-4		1	
		0830			E-KB04-3-5		2	261681
		0840			E-KB04-3-4		1	
		0850			E-KB04-3-3		1	
		0900			E-KB04-3-1		1	

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

PRESERVATION

CF	Chilled-Filtered
SF	Sulfuric-Filtered
NF	Nitric-Filtered
C	Chilled
S	Sulfuric
N	Nitric
B	Basic/NaOH
Z	Zinc
T	Thiosulfate
H	HCL
Ot	Other (see Remarks)

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time 12/10/04 0800	Received by: (Signature)	Date / Time 12/10/04 0800
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Matrix Types S Soil or Sediment, WW Wastewater, T Animal Tissue, SW Surface Water, SL Sludge or Solid Waste, MW Marine Water, GW Ground Water, DW Drinking Water, P Plant Tissue, F Filter, A Air, Ot Other (See Remarks)

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PRESERVATION
CF Chilled-Filtered
SF Sulfuric-Filtered
NF Nitric-Filtered
C Chilled
S Sulfuric
N Nitric
B Basic/NaOH
Z Zinc
T Thiosulfate
H HCL
Ot Other (see Remarks)

SAMPLE FIELD ID. NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	Lab I.D. Number
	12/7/04	1615		✓	E-KB04-1-1	MS	2		261679
		1630			E-KB04-1-2		1		
		1645			E-KB04-1-3		1		
		1700			E-KB04-1-4		1		
		1715		✓	E-KB04-1-5		1		
	12/8/04	0840		✓	RS-KB04-B	MS	3		261688
		0830			RS-KB04-B	MW	4		261676
		0945		✓	RS-KB04-A	MS	3		
		1110		✓	E-KB04-8-1		2		261687
		1120			E-KB04-8-2		1		
		1130			E-KB04-8-3		1		
		1140			E-KB04-8-4		1		
		1150		✓	E-KB04-8-5		1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Precleaned Containers			
	12/10/2004 0800		12/10/04 0800

Remarks and Observations

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

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PRESERVATION
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C Chilled
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N Nitric
B Basic/NaOH
Z Zinc
T Thiosulfate
H HCL
Ot Other (see Remarks)

SAMPLE FIELD ID. NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Lab I.D. Number
	12/9/04	0910		✓	E-KB04-3-2	MS	1	
	12/9/04	0915		✓	E-KB04-2-5	MS	2	261680
	↓	0925		↓	E-KB04-2-4	↓	1	
		0955			E-KB04-2-3		1	
		1000			E-KB04-2-1		1	
		1015			E-KB04-2-2		1	
	12/9/04	1530		✓	Site Water Amber Jars	MW	40	
	12/9/04	1640		✓	Site Water Amber Jars	MW	28	

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time 12/10/04 0800	Received by: (Signature)	Date / Time 12/10/04 0800
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

KB04 Sediments Chemistry

ppb
ENVIRONMENTAL LABORATORIES, INC.
6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor CAS-Kelso, WA
		Shipping Method FedEx Priority

CLIENT NAME: PPB-USACE Kings Bay 2004

CLIENT PROJECT:

SITE NAME & ADDRESS:

SAMPLERS: (Signature)

LAB REPORT GOES TO (Client contact person): Bryan Cotter

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Metals: Al, Sb, As	Ca, Cr, Cu, Fe, Pb	Hg, Mn, Ag, Zn	Pesticides	PCB (Aroclors)	Oil and Grease	PAHs	Total Sulfide	Total Organic Tins	Lab I.D. Number
261679	12/7/04	1615	✓		E-KB04-1	Sed	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	
680	12/9/04	~~1000~~ 0915			-2												
681		0830			-3												
682		0750			-4												
683	12/8/04	1630			-5												
684		1630			-5 dupe												
685		1400			-6												
686		1200			-7												
687		1110			-8												
688		0845			RS-KB04												

PRESERVATION

CF	Chilled-Filtered
SF	Sulfuric-Filtered
NF	Nitric-Filtered
C	Chilled
S	Sulfuric
N	Nitric
B	Basic/NaOH
Z	Zinc
T	Thiosulfate
H	HCL
Ot	Other (see Remarks)

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
			12/10/04
Relinquished by: (Signature)	12/10/04 1600	Received by: (Signature) CASX	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Please use station location as client ID

See Attached SOW for analyses

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

TBT Elutriate Chemistry

ppb
ENVIRONMENTAL LABORATORIES, INC.
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(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor CAS - Kelso, WA
		Shipping Method Fed Ex

CLIENT NAME: PPB - USACE Kings Bay 2004

CLIENT PROJECT:

SITE NAME & ADDRESS:

SAMPLERS: *(Signature)*

LAB REPORT GOES TO (Client contact person): Bryan Cotter

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Metals: Sb, As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	Pesticides per Analytes	PCB (Conn. PAHs)	Cyanide (Total)	Tins	Lab I.D. Number
261732	12/15/04	1200	✓		E-KB04-1-Elutriate	sed		✓	✓	✓	✓	✓	✓	
733					-2-								
734					-3-								
735					-4-								
736					-5-								
737					-5 dupe-								
738	12/16/04	1200			-6-								
739					-7-								
740					-8-								
741					RS-KB04-Elutriate								

PRESERVATION

CF	Chilled-Filtered
SF	Sulfuric-Filtered
NF	Nitric-Filtered
C	Chilled
S	Sulfuric
N	Nitric
B	Basic/NaOH
Z	Zinc
T	Thiosulfate
H	HCL
Ot	Other (see Remarks)

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Precleaned Containers Relinquished by: *(Signature)*			12/15/04
Relinquished by: *(Signature)*		Received by: *(Signature)* CAS	
Relinquished by: *(Signature)*		Received by: *(Signature)*	
Relinquished by: *(Signature)*		Received by: *(Signature)*	

Remarks and Observations

Please use station location as client ID

See Attached SOW for analyses

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

KB04 Seds Physical Testing

ppb
ENVIRONMENTAL LABORATORIES, INC.
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(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor MACTEC-LAW
		Shipping Method Fed Ex

CLIENT NAME: PPB-USACE King's Bay 2004

CLIENT PROJECT:

SITE NAME & ADDRESS:

SAMPLERS: (Signature)

LAB REPORT GOES TO (Client contact person): Bryan Cotter

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

PRESERVATION: CF Chilled-Filtered; SF Sulfuric-Filtered; NF Nitric-Filtered; C Chilled; S Sulfuric; N Nitric; B Basic/NaOH; Z Zinc; T Thiosulfate; H HCL; Ot Other (see Remarks)

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	sed / site water NUMBER OF CONTAINERS	Grain Size	Total Solids/Water content		Specific Gravity	Atterburg Limits	Settling Rates			Lab I.D. Number
261679	12/7/04	1615	✓		E-KB04-1	Sed	1/1	✓	✓		✓	✓	✓			
680	12/9/04	0915			-2											
681		0830			-3											
682		0750			-4											
683	12/8/04	1630			-5											
685		1400			-6											
686		1200			-7											
687		1110			-8											
688		0845			RS-KB04											

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
			BC 12/13/04
Relinquished by: (Signature) [signature]	Date / Time 12/15/04 1200	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Please use station location as client ID.

Site water included

Matrix Types S Soil or Sediment; WW Wastewater; T Animal Tissue; SW Surface Water; SL Sludge or Solid Waste; MW Marine Water; GW Ground Water; DW Drinking Water; P Plant Tissue; F Filter; A Air; Ot Other (See Remarks)

ppb
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6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor CAS Kelly
		Shipping Method FedEx-Air

CLIENT NAME: PPB-USACE Kings Bay 2004

CLIENT PROJECT:

SITE NAME & ADDRESS:

SAMPLERS: *(Signature)*

LAB REPORT GOES TO (Client contact person): Bryan Cotter

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS: See Attached SOW								Lab I.D. Number
261676	12/08/04	0840		✓	E-K804-reference water	W	11	✓								

PRESERVATION

CF	Chilled-Filtered
SF	Sulfuric-Filtered
NF	Nitric-Filtered
C	Chilled
S	Sulfuric
N	Nitric
B	Basic/NaOH
Z	Zinc
T	Thiosulfate
H	HCL
Ot	Other (see Remarks)

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Precleaned Containers Relinquished by: *(Signature)*		PC	12/10/04
[signature]	12/10/04 1700		

Remarks and Observations

Please use station location as client ID

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

APPENDIX C

Field Procedures for Sample and In-situ Data Collection

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/07/2004 Station # E-KB04-1-1

Time 1615 Tidal Cycle High

Water Depth (ft.) 45.3 Coordinates: N 30° 42.6071' W 81° 25.0583'

Project Depth (ft.) 49 Feet

Weather Overcast 74° Winds 10 Knots From SW

Sea State 2' w/ occas 3' Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.0	8.2	7.0	32.4	42.8	3.2
22.7	18.1	8.2	7.1	32.7	43.3	2.6
40.3	18.2	8.2	7.1	32.6	43.3	8.2

Comments: Van Veen Grab Site Shell Rubble & Shell Hash little or no sand

Water Sampler Used: Sea Bird SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/ 7 /2004

Time 1630

Water Depth (ft.) 47'

Project Depth (ft.) ~~49 Feet~~

Weather Overcast 72° Winds 10 Knots From SW

Sea State 2' occas 3'

Station # E-KB04-1-2

Tidal Cycle High

Coordinates: N 30° 42.5291'

W 81° 25.0591'

Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
3.6	18.2	8.2	7.2	32.5	43.1	2.1
~~44.~~						
22.7	18.3	8.2	7.2	32.7	43.4	2.0
44.7	18.4	8.2	7.4	32.8	43.7	1.6

Comments: VanVeen Grab 1 grab yield 1 + gallons course sand + shell rubble

Water Sampler Used: Sea Bird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/7/2004
Time 1645
Water Depth (ft.) 49'
Project Depth (ft.) 49 Feet
Weather Overcast 70° Winds 10 Knots From SW
Sea State 2' occas 3'

Station # E-KB04-1-3
Tidal Cycle High - outgoing
Coordinates: N 30° 42.5380'
W 81° 24.9146'
Field Team TS,EJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.1	8.1	7.4	32.4	42.9	2.5
22.7	18.3	8.2	7.3	32.5	43.2	2.3
46.2	18.4	8.2	7.3	32.8	43.6	2.4

Comments: Van Veen Grab yield 1+ gallons course sand & shell rubble

Water Sampler Used: SeaBird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/ 7 /2004

Station # E-KB04-1-4

Time 1700

Tidal Cycle High Outgoing

Water Depth (ft.) 46'

Coordinates: N 30° 42.6688'

Project Depth (ft.) 49 Feet

W 81° 24.7758

Weather Overcast 70° Winds 10 Knots from SW

Sea State 2' occas 3'

Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.1	8.2	7.1	32.4	42.9	2.3
24.2	18.2	8.2	7.1	32.7	43.4	2.9
44.7	18.2	8.2	7.2	32.8	43.5	2.6

Comments: Van Veen grab yield 1+ gallon course sand with shell rubble

Water Sampler Used: SeaBird SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/ 7 /2004
Time 1715
Water Depth (ft.) 49
Project Depth (ft.) 49 Feet
Weather Overcast 70° Winds 10 Knots from SW
Sea State 2' occas 3'

Station # E-KB04-1-5
Tidal Cycle High - Outgoing
Coordinates: N 30° 42. 5443
W 81° 24. 7730
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
3.6	18.2	8.2	7.1	32.5	43.2	2.6
25.6	18.4	8.2	7.4	32.7	43.6	1.7
46.2	18.3	8.2	7.3	32.8	43.6	1.6

Comments: Van Veen grab yield 1+ gallon course sand & shell rubble

Water Sampler Used: SeaBird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Time 1030
Water Depth (ft.) 49'
Project Depth (ft.) 49 Feet
Weather Sunny Winds 10 Knot from SSW
Sea State 2'

Station # E-KB04-2-1
Tidal Cycle Low Falling
Coordinates: N 30° 42.6736
W 81° 24.4874
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.50	8.10	6.68	31.93	42.78	5.31
25.6	18.47	8.12	6.60	32.01	42.81	5.36
440.	18.49	8.12	6.59	31.95	42.81	5.80

Comments: Van Veen Grab 1 grab yield 1 gallon large rock & shell w/ some med grain size ~~medium~~ sand

Water Sampler Used: Seabird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-2-2
Time 1040
Tidal Cycle Low Falling
Water Depth (ft.) 49 ft
Coordinates: N 30° 42.5558'
Project Depth (ft.) 49 Feet
W 81° 24.4856'
Weather Sunny 80° Winds 10 Knots from SSW
Sea State 2'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (c)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.50	8.10	6.67	31.80	42.62	8.55
27.1	18.50	8.12	6.61	31.94	43.09	10.13
47.6	18.57	8.16	6.63	32.55	43.58	16.24

Comments: Van Veen grab 1 grab yield 1 gallon shell & shell fragment w/ some sand

Water Sampler Used: Seabird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-2-3
Time 1050
Tidal Cycle Low falling
Water Depth (ft.) 50 ft
Coordinates: N 30° 42.6771'
Project Depth (ft.) 49 Feet
W 81° 24.3567'
Weather Sunny Winds 10 Knots from SSW
Sea State 2'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.51	8.10	6.64	31.79	42.57	8.97
27.1	18.48	8.12	6.57	31.90	42.63	7.69
46.2	18.51	8.13	6.56	31.86	42.69	7.20

Comments: Van Veen grab 1 grab yield 1 gallon rock, large shell fragments, + sand

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-2-4
Time 1055
Tidal Cycle Low Falling
Water Depth (ft.) 50 ft
Coordinates: N 30° 42.6845'
Project Depth (ft.) 49 Feet
W 81° 24.2027'
Weather Sunny 80° winds 10 Knots from SSW
Sea State 2'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.53	8.12	6.60	31.78	42.58	5.07
27.1	18.48	8.13	6.58	31.86	42.67	8.30
47.6	18.49	8.13	6.56	31.87	42.63	8.42

Comments: Van Veen Grab ~~Lgr~~ Numerous grabs due to strong current & irregular bottom type yield 1 gallon of rock, shell, & some sand

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-2-5
Time 1105
Tidal Cycle Low Falling
Water Depth (ft.) 50ft
Coordinates: N 30° 42.5660′
Project Depth (ft.) 49 Feet
W 81° 24.1969′
Weather Sunny Winds 10 Knot from SSW
Sea State 2′ & choppy
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.53	8.09	6.66	31.59	42.36	6.78
27.1	18.50	8.12	6.57	31.71	42.48	9.65
47.1	18.55	8.15	6.58	32.25	43.17	11.48

Comments: VanVeen Grab 3 grabs yield 2 gallons hard packed shell rubble w/ some brown course grain size brown sand

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-3-1
Time 1120
Tidal Cycle Low
Water Depth (ft.) 50'
Coordinates: N 30° 42.6946'
Project Depth (ft.) 49 Feet
W 81° 23.9208'
Weather Sunny Winds 10K from SSW
Sea State 2'-3' + choppy
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.51	8.11	6.60	31.65	42.45	7.63
28.6	18.50	8.13	6.55	31.72	42.50	8.61
47.6	18.55	8.15	6.57	32.07	43.00	15.57

Comments: Van Veen Grab 1 grab yield 1 gallon hard packed brown fine + medium grain size sand

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004 Station # E-KB04-3-2

Time 1110 Tidal Cycle Low

Water Depth (ft.) 50 ft Coordinates: N 30° 42.5748

Project Depth (ft.) 49 Feet W 81° 23.9142

Weather Sunny winds 10-15 Knots from SSW

Sea State 2'-3' + choppy Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.55	8.11	6.64	31.70	42.49	5.49
27.6	18.53	8.13	6.60	32.05	42.71	8.97
47.6	18.55	8.20	6.68	33.05	44.22	3.91

Comments: Van Veen grab 1 grab yield 1 gallon hard packed sand and shell particles brown in color

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-3-3
Time 1125
Tidal Cycle Low
Water Depth (ft.) 46 ft
Coordinates: N 30°42.6974'
Project Depth (ft.) 49 Feet
W 81°23.7742'
Weather Sunny 80° Winds 10-15 Knots from SSW
Sea State 2'-3' & choppy
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.58	8.12	6.59	31.59	42.41	4.88
27.1	18.55	8.15	6.64	32.23	43.16	10.07
45.2	18.57	8.20	6.65	33.07	44.22	5.86

Comments: Van Veen Grab 1 grab yield 1 gallon hard packed fine grain size brown sand & some shell hash

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-3-4
Time 1130
Tidal Cycle Low
Water Depth (ft.) 45 ft
Coordinates: N 30°42.6804
Project Depth (ft.) 49 Feet
W 81° 23.6329
Weather Sunny Winds 10 Knots from SSW
Sea State 2'-3' + choppy
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.61	8.11	6.62	31.52	42.34	5.13
27.6	18.59	8.16	6.61	32.28	43.23	6.47
44.0	18.75	8.20	6.68	33.19	44.52	2.01

Comments: Van Veen Grab 1 grab yield 1 gallon hard packed medium grain size brown sand + shell hash

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-3-5
Time 1140
Tidal Cycle Low
Water Depth (ft.) 47 ft
Coordinates: N 30° 42.5589
Project Depth (ft.) 49 Feet
W 81° 23.6293
Weather Sunny Winds 10 Knots from SSW
Sea State 2'-3' & choppy
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.62	8.11	6.61	31.47	42.35	4.70
28.6	18.63	8.15	6.60	32.09	42.14	3.60
45.6	18.72	8.21	6.62	33.21	44.45	2.01

Comments: Van Veen Grab 1 grab yield 2 gallons hard packed course brown sand & shell rubble

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Time 1155
Water Depth (ft.) 39 ft
Project Depth (ft.) 49 Feet
Weather Sunny Winds 10 Knot out of SSW
Sea State 2'-3' & choppy

Station # E-KB04-4-1
Tidal Cycle Low
Coordinates: N 30° 42.6873
W 81° 23.3472
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.61	8.10	6.63	31.57	42.49	7.45
22.7	18.66	8.17	6.65	32.54	43.72	4.40
34.4	18.67	8.20	6.63	33.14	44.37	3.42

Comments: Van Veen Grab 1 grab yield 2 gallons of course sand and some shell hash

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004

Station # E-KB04-4-2

Time 1150

Tidal Cycle Low

Water Depth (ft.) 48 ft

Coordinates: N 30° 42.5678'

Project Depth (ft.) 49 Feet

W 81° 23.3357'

Weather Sunny Winds 10 Knots out SSW

Sea State 2-3' & choppy

Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.70	8.18	6.75	33.15	44.40	2.32
27.1	18.63	8.20	6.58	33.23	44.46	3.72
46.2	18.66	8.21	6.61	33.19	44.38	3.60

Comments: Van Veen Grab 1 grab yield 1 gallon brown course sand and shell rubble

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-4-3
Time 1205
Tidal Cycle Low
Water Depth (ft.) 48 ft
Coordinates: N 30° 42.5739'
Project Depth (ft.) 49 Feet
W 81° 23.1949
Weather Sunny Winds 10 Knot from SSW
Sea State 2' chop
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.75	8.20	6.75	33.18	44.62	5.01
24.2	18.73	8.20	6.69	32.14	43.85	3.97
44.7	18.72	8.21	6.67	33.29	44.50	4.09

Comments: Van Veen Grab 1 grab yield 1 gallon fine grain size sand, clay, mud, & shell

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-4-4
Time 1210
Tidal Cycle Low
Water Depth (ft.) 42'
Coordinates: N 30° 42.6951'
Project Depth (ft.) 49 Feet
W 81° 23.0591'
Weather Sunny 80° Winds 10 Knots from SSW
Sea State 2' chop
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.89	8.20	6.72	33.35	44.83	2.01
24.2	18.69	8.21	6.65	33.30	44.72	4.21
40.3	18.67	8.20	6.60	33.26	44.58	7.81

Comments: Van Veen Grab 1 grab yield 1 gallon hard packed fine to medium grain size brown sand

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/09/2004
Station # E-KB04-4-5
Time 1220
Tidal Cycle Low
Water Depth (ft.) 48
Coordinates: N 30° 42.5781
Project Depth (ft.) 49 Feet
W 81° 23.0552
Weather Sunny Winds 10 Knots from SSW
Sea State 2' chop
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	19.04	8.20	6.81	33.35	44.89	2.08
24.2	18.59	8.20	6.50	33.37	44.59	2.99
46.2	18.61	8.20	6.51	33.24	44.48	5.74

Comments: Van Veen Grab 1 grab yield 1 gallon fine to medium grain size sand w/ some mud & clay, mud, & shell

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1730
Water Depth (ft.) 50
Project Depth (ft.) 49 Feet
Weather Partly Cloudy Calm Winds
Sea State 1-2' swell

Station # E-KB04-5-1
Tidal Cycle HIGH
Coordinates: N 30° 42.6851
W 81° 22.7733
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.91	8.21	7.53	33.38	44.86	1.10
28.6	18.71	8.22	6.84	33.46	44.76	9.71
47.6	18.69	8.21	6.69	33.42	44.72	8.18

Comments: Van Veen Grab 1 grab yield 4 gallons hard packed sand & mud site sampled in Duplicate

Water Sampler Used: SeaBird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-5-2
Time 1735
Tidal Cycle HIGH
Water Depth (ft.) 50'
Coordinates: N 30°42.6092
Project Depth (ft.) 49 Feet
W 81°22.7680
Weather Clearing Winds Calm 70°
Sea State 1'-2' Swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.90	8.22	7.52	33.37	44.75	1.04
27.1	18.73	8.22	6.78	33.41	44.73	1.40
47.6	18.67	8.21	6.43	33.60	44.89	2.08

Comments: Van Veen Grab 1 grab yield 2+ gallons medium consistency mud, sand, & clay gray green color Site Sampled in Duplicate

Water Sampler Used: SeaBird SBE-19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1725
Water Depth (ft.) 50 ft
Project Depth (ft.) 49 Feet
Weather Overcast Winds Calm 70°
Sea State 1-2' swell

Station # E-KB04-5-3
Tidal Cycle High
Coordinates: N 30° 42.6838
W 81° 22.6281
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.97	8.25	7.55	33.33	44.89	1.16
27.1	18.69	8.21	6.82	33.47	44.71	8.55
47.1	18.70	8.21	6.72	33.44	44.77	3.11

Comments: Van Veen Grab 1 grab yield 2 gallons sand, mud, clay medium consistency site Sampled in Duplicate

Water Sampler Used: SeaBird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-5-4
Time 1715
Tidal Cycle High
Water Depth (ft.) 49'
Coordinates: N 30° 42.6931'
Project Depth (ft.) 49 Feet
W 81° 22.4912'
Weather Partly Cloudy Winds Calm 70°
Sea State 1-2'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	19.10	8.23	7.65	33.25	44.84	19.54
25.6	18.70	8.20	6.71	33.42	44.76	26.62
			6.56↓			
47.2	18.71	8.19	~~4.83~~	33.57	44.90	24.51

Comments: Van Veen Grab 1 grab yield 2 gallons thin consistency mud atop hard packed course sand - Site Sampled in Duplicate

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-5-5
Time 1720
Tidal Cycle High
Water Depth (ft.) 49 ft
Coordinates: N 30° 42.6239
Project Depth (ft.) 49 Feet
W 81° 22.4831
Weather Partly Cloudy Calm Winds 70°
Sea State 1'-2' swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	19.04	8.23	7.67	33.24	44.76	6.84
27.1	18.73	8.21	6.72	33.50	44.88	1.53
44.7	18.68	8.21	6.53	33.69	45.04	3.48

Comments: VanVeen Grab - 1grab yield 2 gallons thick consistency mud & sand Site sampled in Duplicate

Water Sampler Used: SeaBird SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1350
Water Depth (ft.) 49 ft
Project Depth (ft.) 49 Feet
Weather Partly Sunny & Calm 74°
Sea State 1-2' Swell

Station # E-KB04-6-1
Tidal Cycle High Incoming
Coordinates: N 30° 42.7031'
W 81° 22.1999
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.37	8.19	6.87	32.81	43.69	1.71
27.1	18.55	8.21	6.63	33.37	44.54	6.41
43.4	18.57	8.22	6.62	33.36	44.50	10.56

Comments: VanVeen Grab 1 grab yield 2 gallons very thin consistency mud green gray in color

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1345
Water Depth (ft.) 49 ft
Project Depth (ft.) 49 Feet
Weather Overcast & Calm
Sea State 1-2' Swell

Station # E-KB04-6-2
Tidal Cycle High Incoming
Coordinates: N 30° 42.6306'
W 81° 22.1987'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.40	8.19	7.02	32.37	43.27	1.65
27.1	18.34	8.20	6.95	32.56	43.35	1.59
47.2	18.52	8.21	3.15	23.83	32.69	4.95

Comments: Van Veen Grab 1 grab yield

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-6-3
Time 1335
Tidal Cycle Low-climbing
Water Depth (ft.) 49 ft
Coordinates: N 30° 42.6382'
Project Depth (ft.) 49 Feet
W 81° 22.0514'
Weather Partly Sunny & Calm 74°
Sea State 2' swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.36	8.18	6.99	32.45	43.20	2.93
27.1	18.47	8.21	6.74	33.28	44.34	1.34
44.4	18.59	8.22	6.62	33.31	44.51	8.42

Comments: Van Veen Grab

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-6-4
Time 1325
Tidal Cycle Low climbing
Water Depth (ft.) 48'
Coordinates: N 30°42.7076
Project Depth (ft.) 49 Feet
W 81°21.9122
Weather Partly Sunny calm Winds 74°
Sea State 2' swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.36	8.19	6.86	32.80	43.96	1.95
27.1	18.43	8.20	6.71	33.27	44.62	10.50
43.6	18.63	8.21	5.91	33.61	44.87	12.94

Comments: Van Veen Grab

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004

Station # E-KB04-6-5

Time 1315

Tidal Cycle Low climbing

Water Depth (ft.) 48 ft

Coordinates: N 30° 42.6412'

Project Depth (ft.) 49 Feet

W 81° 21.9112'

Weather Partly Sunny Winds Calm 74°

Sea State 2' swell

Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.33	8.18	6.94	32.41	43.17	2.08
25.6	18.37	8.20	6.87	32.69	43.38	1.91
46.2	18.66	8.21	3.15	24.94	34.22	12.94

Comments: Van Veen Grab

Water Sampler Used: SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-7-1
Time 1240
Tidal Cycle Low climbing
Water Depth (ft.) 48ft
Coordinates: N 30° 42.7191'
Project Depth (ft.) 49 Feet
W 81° 21.6269'
Weather Overcast Light Breeze 72°
Sea State 2' Swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
3.0	18.36	8.2	6.8	32.8	43.8	2.9
27.1	18.91	8.2	6.5	33.8	45.4	9.4
44.6	19.00	8.2	6.4	33.9	45.4	24.3

Comments: Van Veen grab 1 grab yield thin to medium consistency mud w/ Sand present 1 gallon sample

Water Sampler Used: Sea Bird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004

Station # E-KB04-7-2

Time 1235

Tidal Cycle Low - climbing

Water Depth (ft.) 49

Coordinates: N 30° 42.6492'

Project Depth (ft.) 49 Feet

W 81° 21.6233

Weather Overcast Light Wind 72°

Sea State 2' Swell

Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.73	8.1	6.8	32.0	42.9	2.3
25.6	18.36	8.2	6.7	33.1	44.0	2.3
46.2	18.92	8.1	3.43	24.9	34.55	41.4

Comments: Van Veen Grab w/ 1 grab yields 1 gallon hard packed black clay & sand w/ layer fine consistency brown mud on surface

Water Sampler Used: Sea Bird SBF 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-7-3
Time 1245
Tidal Cycle Low climbing
Water Depth (ft.) 48 ft
Coordinates: N 30° 42.7213'
Project Depth (ft.) 49 Feet
W 81° 21.4814'
Weather Overcast Winds Calm 72°
Sea State 2' Swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.32	8.16	6.92	32.67	43.47	2.08
27.1	18.44	8.19	6.73	32.98	43.96	1.59
46.2	18.98	8.17	3.50	25.08	34.41	15.81

Comments: VanVeen Grab 1 grab yield 1 gallon thin consistency dark gray mud

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-7-4
Time 1256
Tidal Cycle Low climbing
Water Depth (ft.) 49 ft
Coordinates: N 30° 42.7313'
Project Depth (ft.) 49 Feet
W 81° 21.3379
Weather Overcast Wind Calm 73°
Sea State 2' Swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.36	8.18	6.93	32.62	43.49	1.77
28.6	18.77	8.21	6.55	33.61	45.10	1.10
47.6	19.00	8.21	6.25	33.89	45.51	26.74

Comments: Van Veen Grab 1 grab yield 1 gallon medium consistency mud & sand gray in color

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-7-5
Time 1305
Tidal Cycle Low climbing
Water Depth (ft.) 48 ft
Coordinates: N 30° 42.6582'
Project Depth (ft.) 49 Feet
W 81° 21.3387'
Weather Overcast Winds Calm 74°
Sea State 2' Swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.79	8.17	7.21	32.12	43.21	1.71
25.6	18.52	8.21	6.66	33.33	44.40	1.04
46.2	18.96	8.21	6.40	33.81	45.41	7.08

Comments: Van Veen Grab 1 grab yield 2 gallons very thin consistency grey mud

Water Sampler Used: SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1100
Water Depth (ft.) 49 ft
Project Depth (ft.) 49 Feet
Weather Overcast Winds Light
Sea State 2' Swell

Station # E-KB04-8-1
Tidal Cycle Low
Coordinates: N 30° 42.7389'
W 81° 21.0543'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.4	8.2	7.0	32.8	43.6	2.6
27.1	18.7	8.2	6.6	33.5	44.9	2.9
43.2	19.0	8.2	6.4	33.9	45.7	6.0

Comments: Van Veen Grab 1 grab yield 2 gallons thick black mud thin layer of sand on top odor noticed slight sulphur ~~in~~ aroma

Water Sampler Used: SeaBird SBE-19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Station # E-KB04-8-2
Time 1050
Tidal Cycle Low
Water Depth (ft.) 48 ft
Coordinates: N 30° 42.6708'
Project Depth (ft.) 49 Feet
W 81° 21.0514'
Weather Overcast Light Breeze 70°
Sea State 2' Swell
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.3	8.2	6.9	32.8	43.6	3.1
27.1	18.6	8.2	6.6	33.3	44.4	3.2
46.2	19.05	8.2	3.1	22.8	31.9	4.7

Comments: Van Veen Grab 1 grab yield 1 gallons thin black mud some gray mud & clay present

Water Sampler Used: SeaBird SBE-19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1040
Water Depth (ft.) 49 ft
Project Depth (ft.) 49 Feet
Weather Fog Light Breeze 70°
Sea State 2' Swell

Station # E-KB04-8-3
Tidal Cycle Low
Coordinates: N 30°42.7444'
W 81° 20.9116'
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.37	8.18	7.00	32.75	43.64	2.14
25.6	18.85	8.21	6.51	33.63	45.13	1.16
43.2	19.09	8.22	6.42	33.95	45.75	3.05

Comments: Van Veen Grab 1 grab yield 1 gallon
medium consistency mud gray in color
sand & clay present

Water Sampler Used: Sea Bird SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08 /2004
Time 10 30
Water Depth (ft.) 49
Project Depth (ft.) 49 Feet
Weather Fog 70° Light Breeze
Sea State 2-3' Swell

Station # E-KB04-8-4
Tidal Cycle Low
Coordinates: N 30° 42.7488
W 81° 20.7655
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.39	8.21	6.93	32.94	43.86	2.65
25.6	18.91	8.21	6.50	33.74	45.29	1.04
43.8	19.13	8.22	6.42	33.90	45.67	2.56

Comments: Van Veen Grab 1 grab yield 1 gallon medium consistency mud & sand clay present

Water Sampler Used: Sea Bird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 1020
Water Depth (ft.) 49 ft
Project Depth (ft.) 49 Feet
Weather Fog Some Sun 72° winds from SSW
Sea State 2-3' Seas

Station # E-KB04-8-5
Tidal Cycle Falling Low
Coordinates: N 30° 42.6802
W 81° 20.7677
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (c)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.4	8.2	6.9	33.0	43.9	2.3
24.2	18.9	8.2	6.5	33.8	45.3	1.0
44.7	19.1	8.23	6.4	34.0	45.8	3.6

Comments: Van Veen Grab 1 grab yield 1 gallon thick consistency mud w/ some sand dark gray color

Water Sampler Used: SeaBird SBE 19

Sensor Serial # : 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 0945
Water Depth (ft.) 65'
Project Depth (ft.) 49 Feet
Weather Fog 72° Light Breeze
Sea State 2'-3' Swell

Station # RS-KB04-A
Tidal Cycle Falling To Low
Coordinates: N 30° 33.9062
W 81° 17.9855
Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	18.9	8.2	7.4	33.2	44.7	1.0
30.0	19.8	8.2	6.1	34.0	46.5	0.9
60.8	19.6	8.2	6.1	34.1	46.4	1.9

Comments: Van Veen Grab 1 grab yield 3 gallons course sand & shell w/ trace of mud

Water Sampler Used: Sea Bird SBE 19

Sensor Serial #: 2680

KINGS BAY ENTRANCE CHANNEL 2004
PPB/COE
WATER QUALITY ASSESSMENT

Date 12/08/2004
Time 0840
Water Depth (ft.) 59'
Project Depth (ft.) 49 Feet
Weather Fog Light Breeze 70°
Sea State 2'-3' Swells

Station # RS-KB04-B
Tidal Cycle High Falling
Coordinates: N 30° 30. 1364
W 81° 17. 9328'

Field Team TS,FJ,TSh

Sampling Depth (ft)	Temp (C)	pH	Dissolved O_2 mg/l	Salinity (ppt)	Conductivity (mmhos/cm)	Turbidity (ntu/s)
2.2	19.6	8.1	6.1	33.1	45.2	1.4
27.1	20.2	8.2	5.9	34.1	47.0	0.7
53.5	20.1	8.2	6.0	34.2	47.1	0.4

Comments: Van Veen Grab 1 grab yields 3 gallons fine grain size sand hard packed w/ small trace of black mud

Water Sampler Used: Seabird SBE 19

Sensor Serial #: 2680

APPENDIX D

Field Sampling Sheets

KINGS BAY ENTRANCE CHANNEL
FIELD OPS LOG DECEMBER 2004

Tuesday, 12/07/04

0800 Leave Jupiter; transit to Fernandina Beach.
1430 TS, FJ, TSH arrive at Fernandina Beach; begin vessel preparation at marina.
1600 Complete preparation; mobilize vessel, stow trailer, and secure dockage. Begin transit to E-KB04-1-1.
1615 Begin Van Veen grab sampling at E-KB04-1-1 at 45 ft; 1 grab yields 2+ gallons of shell rubble and shell hash. Transit to E-KB04-1-2.
1630 Begin Van Veen grab sampling at E-KB04-1-2 at 47 ft; 1 grab yields 1+ gallons of coarse sand and shell rubble.
1645 Begin Van Veen grab sampling at E-KB04-1-3 at 49 ft; 1 grab yields 1+ gallons of coarse sand and shell rubble.
1700 Begin Van Veen grab sampling at E-KB04-1-4 at 46 ft; 1 grab yields 1+ gallons of coarse sand and shell rubble. Transit to E-KB04-1-5.
1715 Begin Van Veen grab sampling at E-KB04-1-5 at 49 ft; 1 grab yields 1+ gallons of coarse sand and shell rubble.
1725 Begin Sea-Bird cast at E-KB04-1-5.
1735 Begin Sea-Bird cast at E-KB04-1-4.
1740 Begin Sea-Bird cast at E-KB04-1-3.
1745 Begin Sea-Bird cast at E-KB04-1-2.
1750 Begin Sea-Bird cast at E-KB04-1-1; complete water quality data collection. Begin transit to marina.
1810 Arrive at marina. Begin vessel and equipment demobilization, and prepare for a.m. sampling. Begin sample icing and storage.
1845 Secure vessel; ice and store samples. Cease operations.

Wednesday, 12/08/04

0700 Leave dock; transit to RS-KB04-B.
0830 Arrive at site RS-KB04-B; begin collecting 4 gallons of site water.
0850 Begin Sea-Bird cast at RS-KB04-B.
0900 Complete cast. Begin Van Veen grab sampling at RS-KB04-B at 59 ft.
0915 One Van Veen grab yields 3 gallons of hard-packed, fine grain size sand. Brown in color with small trace of black mud present. Begin transit to RS-KB04-A.
0930 Begin Van Veen grab sampling at RS-KB04-A at 65 ft.
0945 One grab yields 3 gallons of coarse sand with shell and presence of mud.
0946 Begin Sea-Bird water quality cast.
0955 Complete cast. Begin transit to E-KB04-8-5.
1020 Arrive at E-KB04-8-5. Begin Sea-Bird cast.
1030 Sea-Bird cast at E-KB04-8-4.
1040 Sea-Bird cast at E-KB04-8-3.
1050 Sea-Bird cast at E-KB04-8-2.
1100 Sea-Bird cast at E-KB04-8-1.
1110 Begin Van Veen grab sampling at E-KB04-8-1 at 49 ft; 1 grab yields 2 gallons of thick black mud, thin layer of sand on top, and odor noticed - a slight sulfur aroma.

Wednesday, 12/08/04 (Continued)

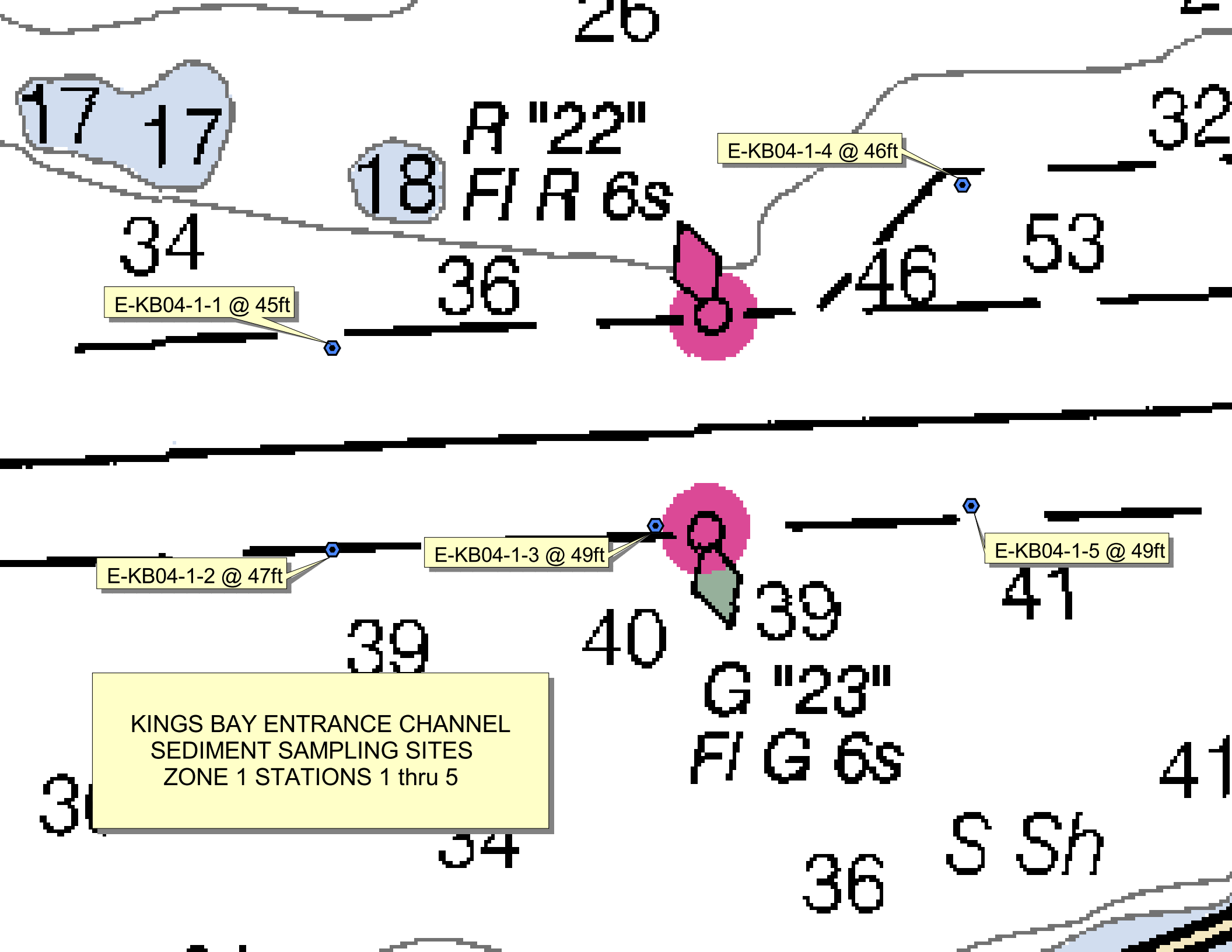
1120	Begin Van Veen grab sampling at E-KB04-8-2 at 48 ft; 1 grab yields 1 gallon of thin black mud, with some gray mud and clay present.
1130	Begin Van Veen grab sampling at E-KB04-8-3 at 49 ft; 1 grab yields 1 gallon of medium consistency mud, gray in color, with sand and clay present.
1140	Begin Van Veen grab sampling at E-KB04-8-4 at 49 ft; 1 grab yields 1 gallon of medium consistency mud, with sand and clay present.
1150	Begin Van Veen grab sampling at E-KB04-8-5 at 49 ft; 1 grab yields 1 gallon of thick consistency mud with some sand, dark gray in color.
1200	Begin Van Veen grab sampling at E-KB04-7-5 at 48 ft; 1 grab yields 2 gallons of very thin consistency gray mud.
1210	Begin Van Veen grab sampling at E-KB04-7-4 at 49 ft; 1 grab yields 1 gallon of medium consistency mud and sand, gray in color.
1220	Begin Van Veen grab sampling at E-KB04-7-3 at 48 ft; 1 grab yields 1 gallon of thin consistency dark gray mud.
1225	Begin Van Veen grab sampling at E-KB04-7-1 at 48 ft; 1 grab yields 1 gallon of thin to medium consistency mud with sand present.
1230	Begin Van Veen grab sampling at E-KB04-7-2 at 49 ft; 1 grab yields 1 gallon of hard-packed black clay and sand, with layer of fine consistency brown mud on surface.
1235	Begin Sea-Bird cast at E-KB04-7-2 at 49 ft.
1240	Begin Sea-Bird cast at E-KB04-7-1 at 48 ft.
1245	Begin Sea-Bird cast at E-KB04-7-3 at 48 ft.
1255	Begin Sea-Bird cast at E-KB04-7-4 at 49 ft.
1305	Begin Sea-Bird cast at E-KB04-7-5 at 48 ft.
1315	Begin Sea-Bird cast at E-KB04-6-5 at 48 ft.
1325	Begin Sea-Bird cast at E-KB04-6-4 at 48 ft.
1335	Begin Sea-Bird cast at E-KB04-6-3 at 49 ft.
1345	Begin Sea-Bird cast at E-KB04-6-2 at 49 ft.
1350	Begin Sea-Bird cast at E-KB04-6-1 at 49 ft.
1400	Begin Van Veen grab sampling at E-KB04-6-1 at 49 ft; 1 grab yields 2 gallons of very thin consistency mud, gray green in color.
1410	Begin Van Veen grab sampling at E-KB04-6-2 at 49 ft; 1 grab yields 1 gallon of very thin consistency mud, gray green in color.
1420	Begin Van Veen grab sampling at E-KB04-6-3 at 49 ft; 1 grab yields 1 gallon of medium consistency mud, gray green in color and clay material.
1425	Begin Van Veen grab sampling at E-KB04-6-5 at 48 ft; 1 grab yields 1 gallon of thin to medium consistency mud, with some larger grain size sand present. Gray green in color.
1430	Begin Van Veen grab sampling at E-KB04-6-4 at 48 ft; 1 grab yields 1 gallon of medium consistency, with large grain size sand present. Green gray in color. Begin transit to marina to offload sampler cooler and to restock sample jars.
1455	Arrive at dock. Begin cooler offload, fuel vessel, re-ice samples, and restock coolers.
1550	Leave dock. Transit to E-KB04-5-1.
1620	Arrive at E-KB04-5-1 (50 ft). Begin Van Veen grab sampling.
1630	One grab yields 4 gallons of hard-packed sand and mud. Also sample this site as E-KB04-5-1 Duplicate.
1635	Begin grab sampling at E-KB04-5-2 at 50 ft. Also sample Duplicate.

Wednesday, 12/08/04 (Continued)

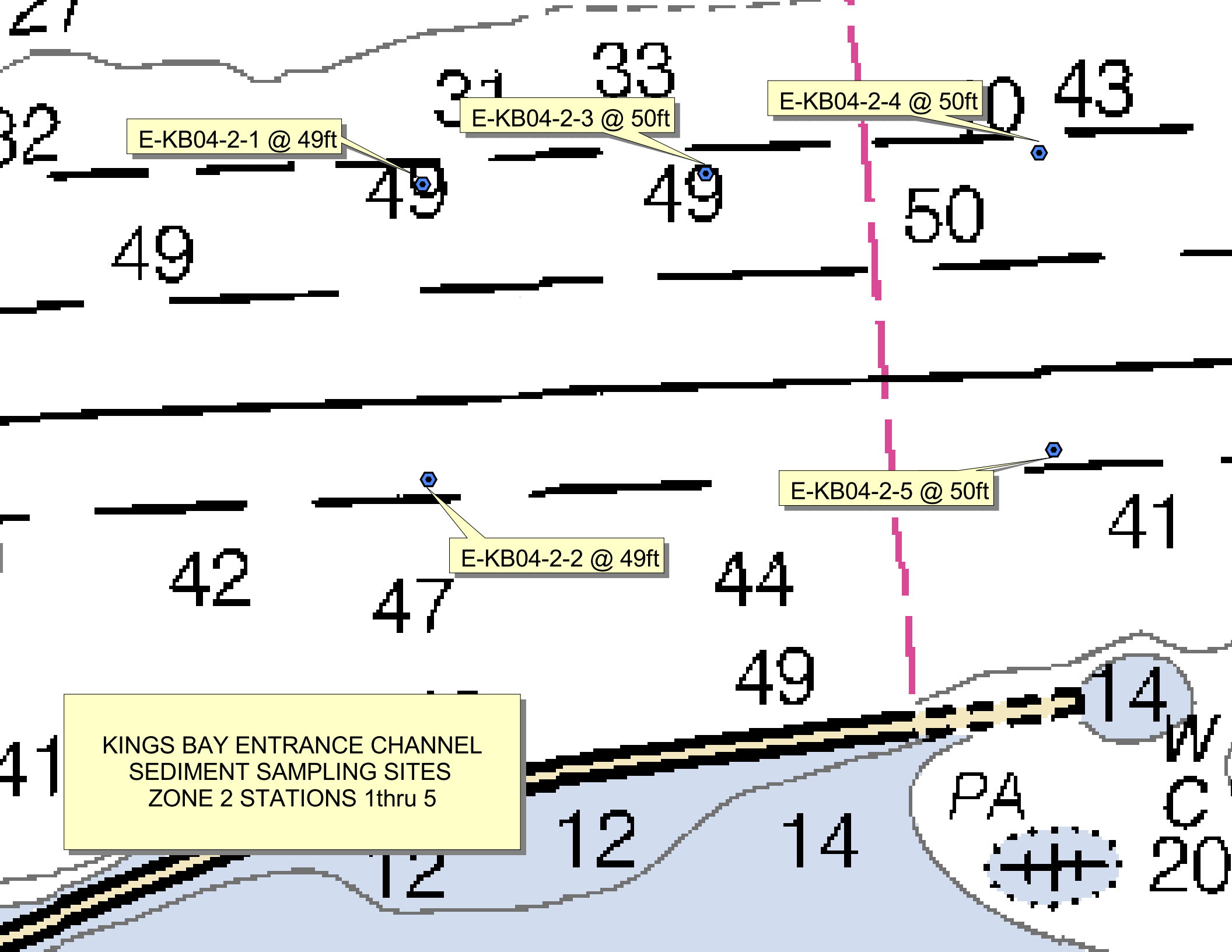
1640	One grab yields 2 gallons of medium consistency mud, sand, and clay; gray green in color.
1645	Began Van Veen grab sampling at E-KB04-5-3 at 50 ft.
1650	One grab yields 2 gallons of sand, mud, clay; medium consistency. Also sample Duplicate.
1655	Begin Van Veen grab sampling at E-KB04-5-4 at 50 ft.
1700	Thin consistency mud on top of hard-packed coarse sand. Also sample Duplicate - 2 gallons.
1705	Begin Van Veen grab sampling at E-KB04-5-5 at 50 ft.
1710	One grab yields 2 gallons of thick mud and sand. Also sample Duplicate.
1715	Begin Sea-Bird cast at E-KB04-5-4 at 50 ft.
1720	Begin Sea-Bird cast at E-KB04-5-5 at 50 ft.
1725	Begin Sea-Bird cast at E-KB04-5-3 at 50 ft.
1730	Begin Sea-Bird cast at E-KB04-5-1 at 50 ft.
1735	Begin Sea-Bird cast at E-KB04-5-2 at 50 ft.
1745	Complete cast. Begin transit to marina.
1815	Arrive at marina. Begin cooler offload, ice equipment, and prepare vessel for a.m. Stow and restock sampling cooler.
1915	Complete demobilization and preparation. Cease operations.

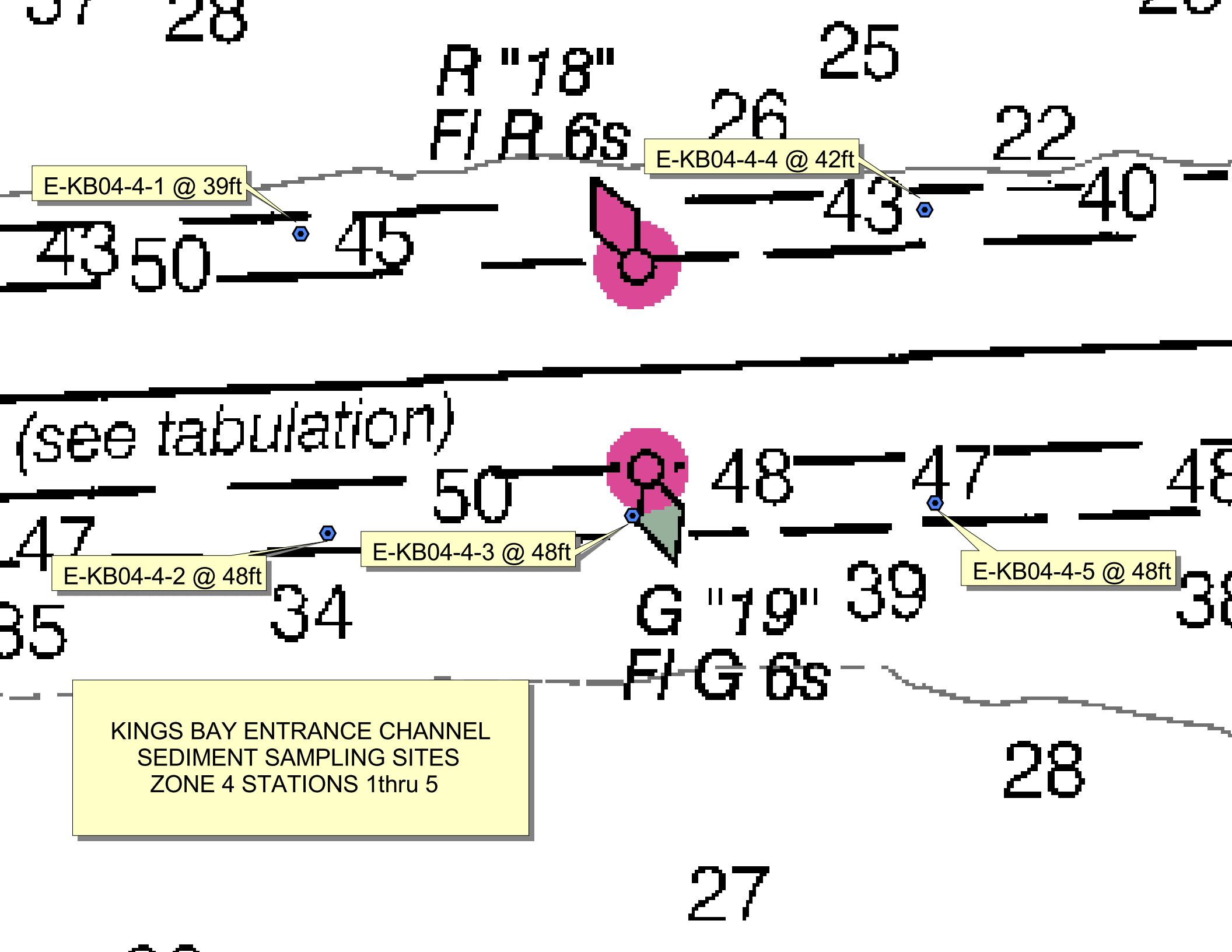
Thursday, 12/09/04

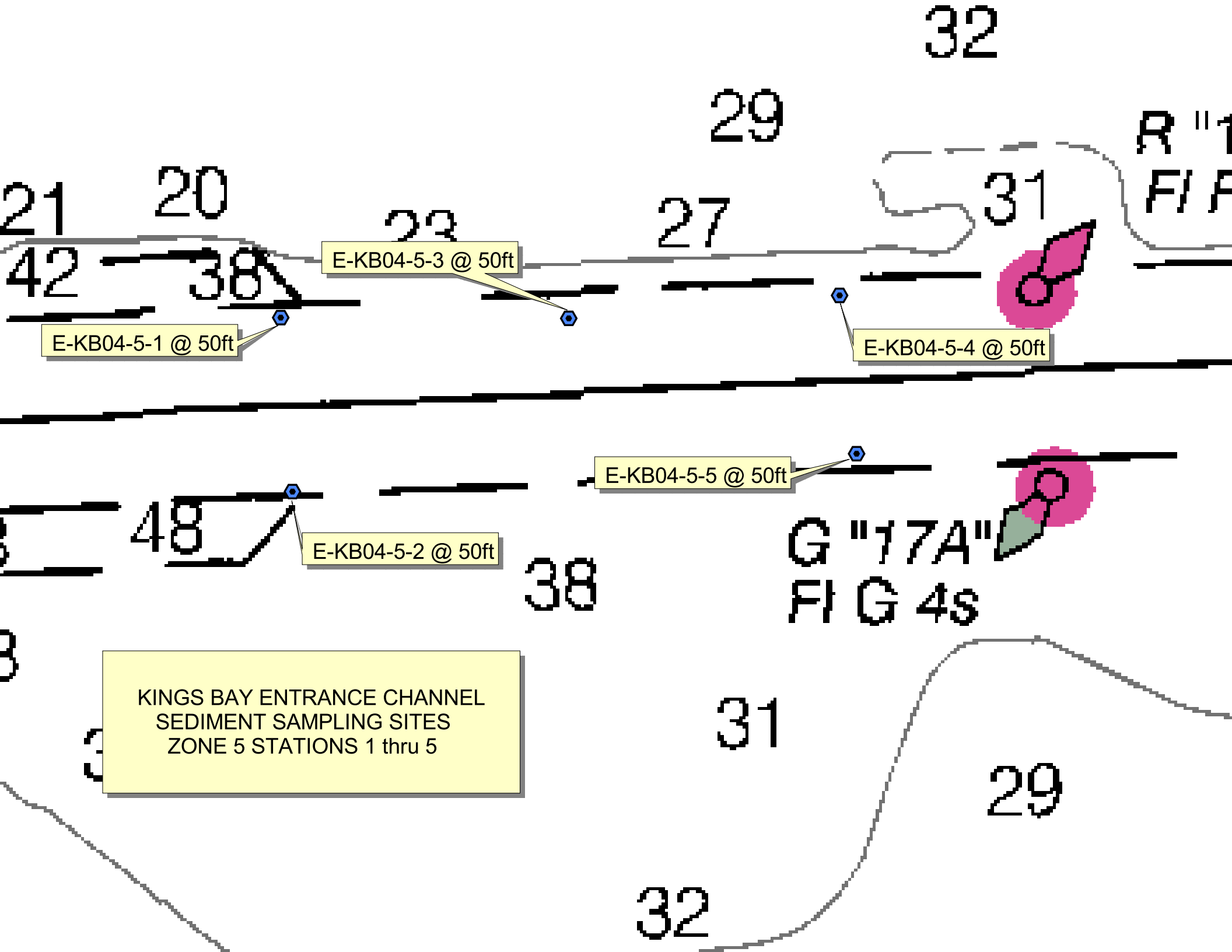
0715	Arrive at vessel. Begin sampling preparation.
0730	Leave marina. Begin transit to E-KB04-4-1.
0750	Begin grab sampling at E-KB04-4-1 at 39 ft.
0800	One grab yields 2 gallons of coarse sand and some shell hash.
0800	Begin grab sampling at E-KB04-4-2 at 48 ft; 1 grab yields 1 gallon of brown coarse sand and shell rubble.
0810	Begin grab sampling at E-KB04-4-3 at 48 ft; 1 grab yields 1 gallon of fine grain size sand, clay, mud, and shell.
1815	Begin grab sampling at E-KB04-4-5 at 48 ft; 1 grab yields 1 gallon of fine to medium grain size sand with some mud and clay present. Brown in color.
0820	Begin grab sampling at E-KB04-4-4 at 42 ft; 1 grab yields 1 gallon of hard-packed fine to medium grain size brown sand.
0830	Begin Van Veen grab sampling at E-KB04-3-5 at 47 ft; 1 grab yields 2 gallons of hard-packed coarse brown sand and shell rubble.
0840	Begin Van Veen grab sampling at E-KB04-3-4 at 45 ft; 1 grab yields 1 gallon of hard-packed medium grain size brown sand and shell hash.
0850	Begin Van Veen grab sampling at E-KB04-3-3 at 46 ft; 1 grab yields 1 gallon of hard-packed fine grain size brown sand, with some shell hash.
0900	Begin Van Veen grab sampling at E-KB04-3-1 at 50 ft; 1 grab yields 1 gallon of hard-packed brown fine to medium grain size sand.
0910	Begin Van Veen grab sampling at E-KB04-3-2 at 50 ft; 1 grab yields 1 gallon of hard-packed sand and shell particles.
0915	Begin Van Veen grab sampling at E-KB04-2-5 at 50 ft; 3 grabs yield 2 gallons of hard-packed shell rubble, with some brown coarse grain size sand.

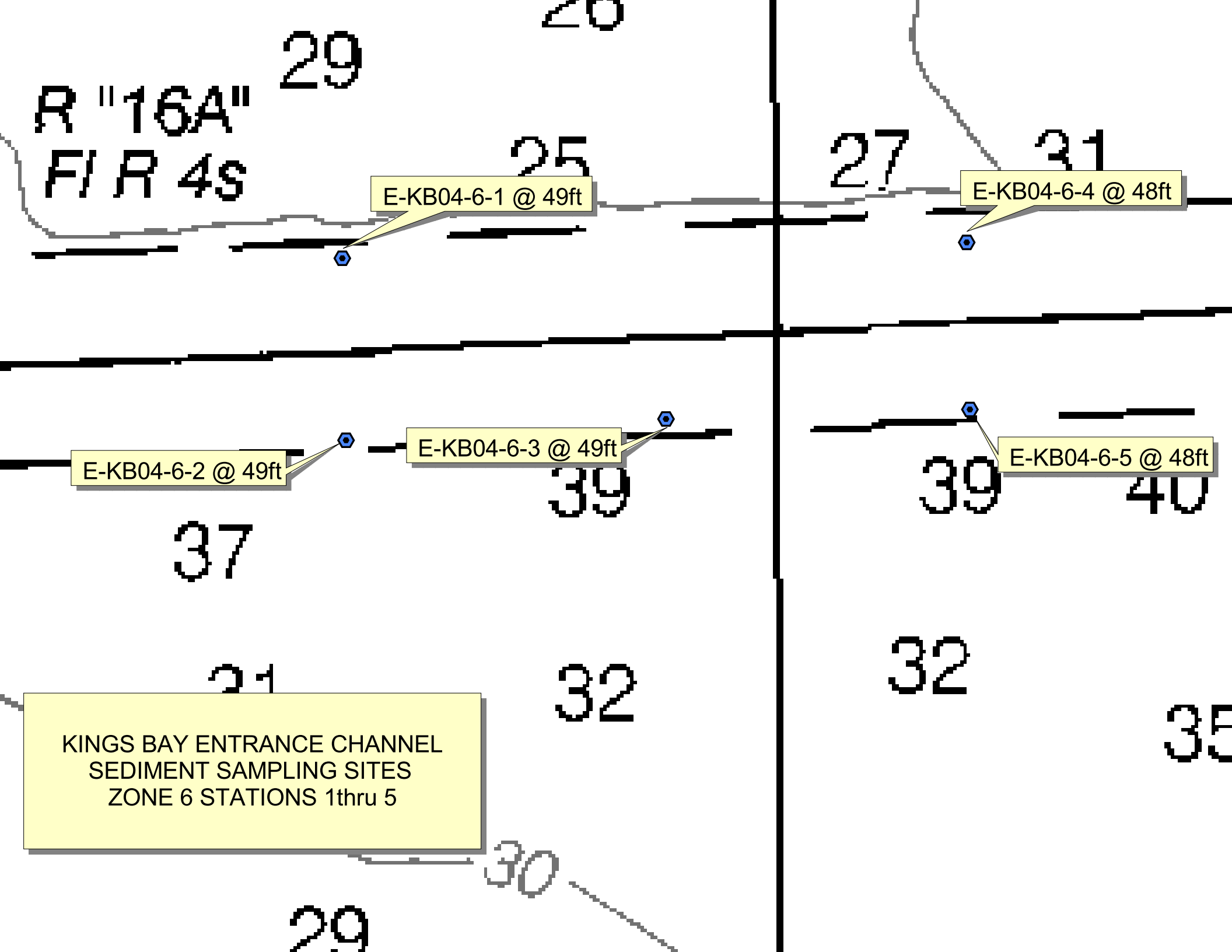


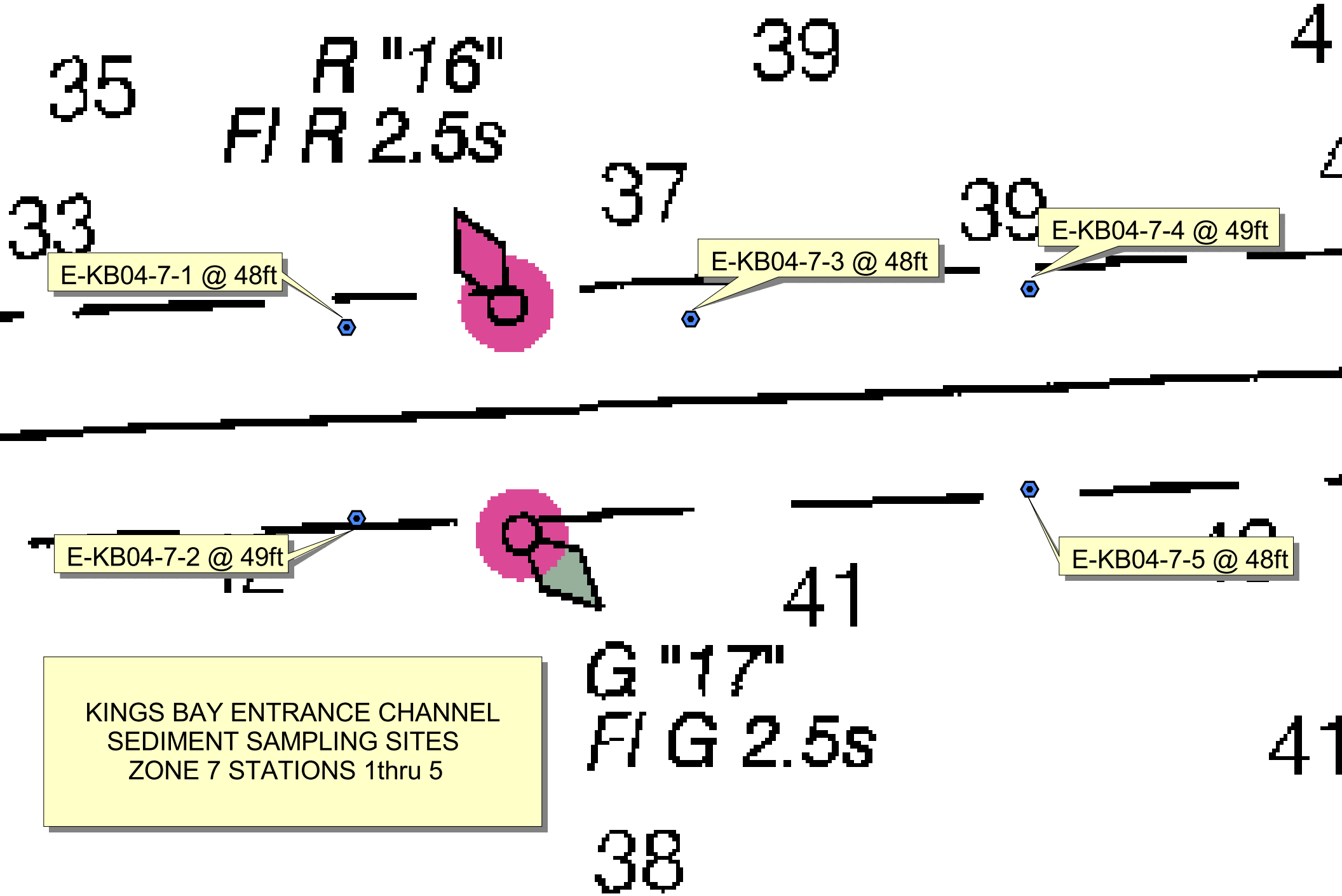
KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 1 STATIONS 1 thru 5


E-KB04-2-1 @ 49ft
E-KB04-2-2 @ 49ft
E-KB04-2-3 @ 50ft
E-KB04-2-4 @ 50ft
E-KB04-2-5 @ 50ft
KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 2 STATIONS 1thru 5
33
43
49
50
42
47
44
41
12
14
PA
20

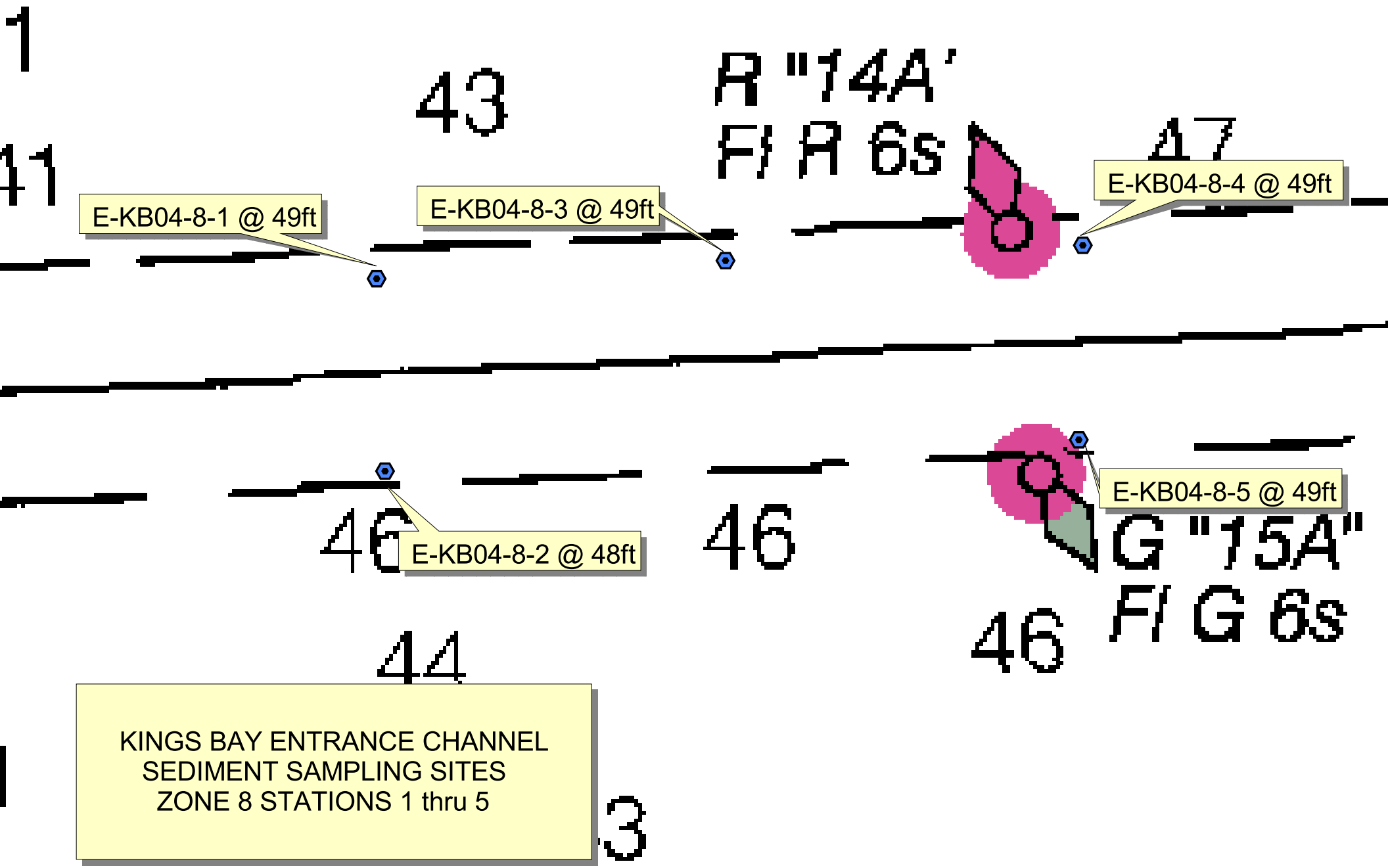

E-KB04-4-1 @ 39ft
E-KB04-4-2 @ 48ft
E-KB04-4-3 @ 48ft
E-KB04-4-4 @ 42ft
E-KB04-4-5 @ 48ft
R "18"
Fl R 6s
G "19"
Fl G 6s
(see tabulation)
KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 4 STATIONS 1thru 5


32
29
R "1
Fl F
21
20
23
27
31
42
38
E-KB04-5-3 @ 50ft
E-KB04-5-1 @ 50ft
E-KB04-5-4 @ 50ft
E-KB04-5-5 @ 50ft
48
E-KB04-5-2 @ 50ft
38
G "17A"
Fl G 4s
KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 5 STATIONS 1 thru 5
31
29
32

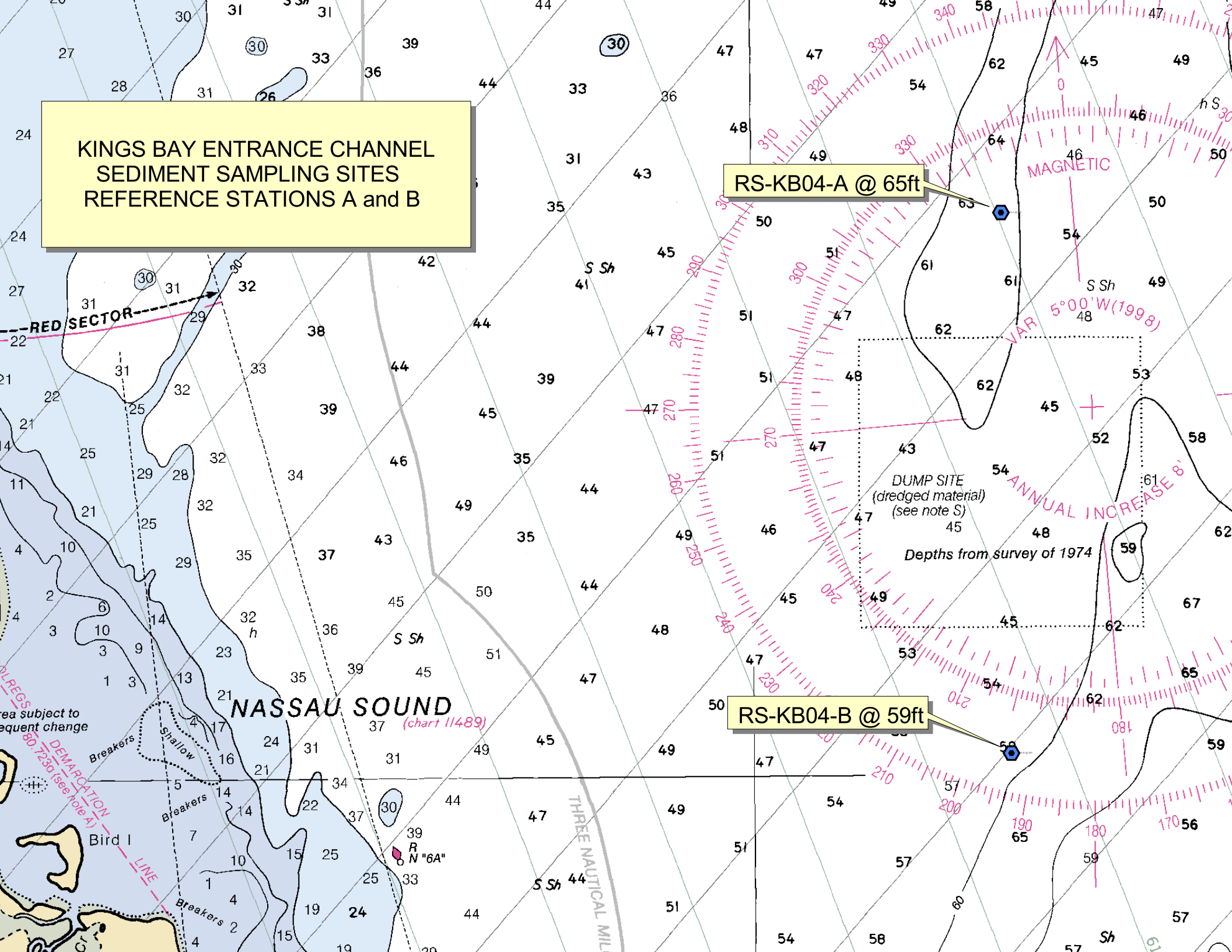

29
R "16A"
Fl R 4s
25
27
31
E-KB04-6-1 @ 49ft
E-KB04-6-4 @ 48ft
E-KB04-6-2 @ 49ft
E-KB04-6-3 @ 49ft
E-KB04-6-5 @ 48ft
39
39
40
37
32
32
35
KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 6 STATIONS 1thru 5
30
29

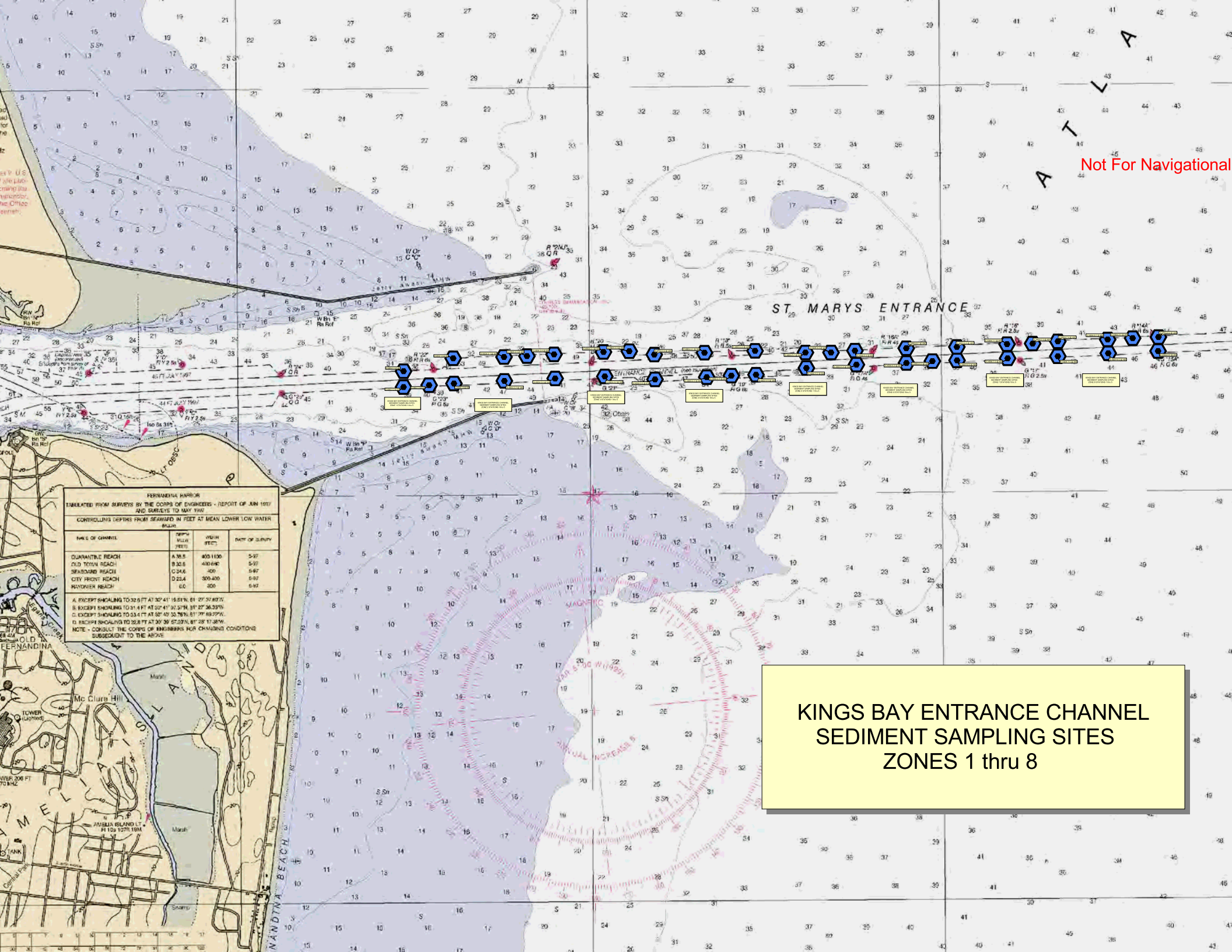


KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 7 STATIONS 1thru 5



KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONE 8 STATIONS 1 thru 5


KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
REFERENCE STATIONS A and B
RS-KB04-A @ 65ft
RS-KB04-B @ 59ft
RED SECTOR
NASSAU SOUND
(chart 11489)
DUMP SITE
(dredged material)
(see note S)
Depths from survey of 1974
MAGNETIC
VAR 5°00'W(1998)
ANNUAL INCREASE 8'
Breakers
Shallow
Bird I
THREE NAUTICAL MILES



KINGS BAY ENTRANCE CHANNEL
SEDIMENT SAMPLING SITES
ZONES 1 thru 8

APPENDIX E

Physical Testing Data

MACTEC

REPORT OF SOIL TESTING

Project: PPB-USACOE-King Bay 2004 Project Number: 6063-04-0017-0900

Client: PPB Environmental Date: January 4, 2005

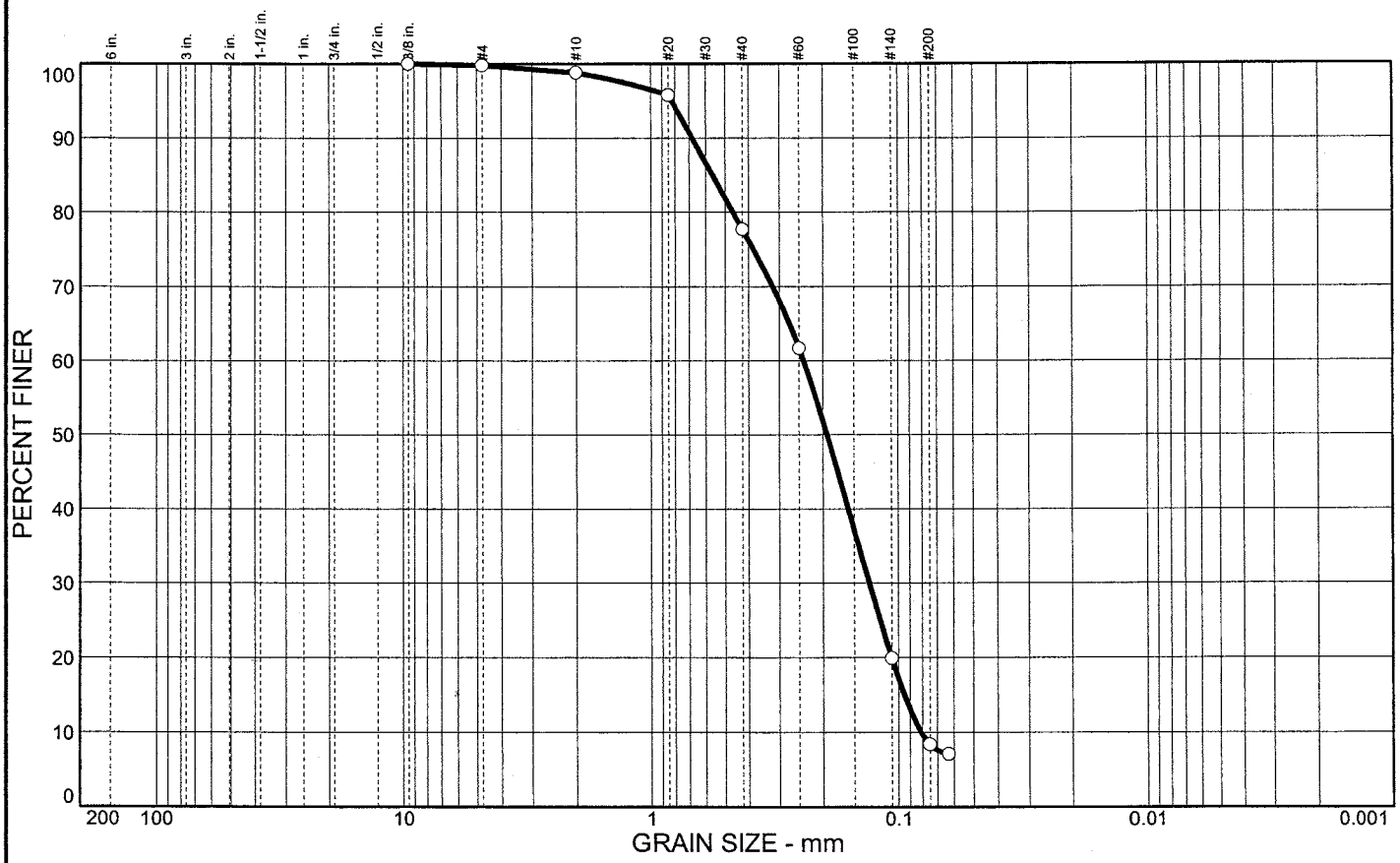
As requested by Mr. Bryan Cotter of PPB Environmental Laboratories, Inc., MACTEC Engineering & Consulting Inc. has completed moisture content and total solids, Atterberg Limits, Specific Gravity, Settling Rate and Grain Size Testing of nine samples that were delivered to our Jacksonville office on December 16, 2004. The results are outlined below and on the attached sheets.

Sample Number	Station	Percent Solids (%)	Moisture Content (%)	Specific Gravity	Atterberg Limits		
					Liquid Limit	Plastic Limit	Plasticity Index
261679	E-KB04-1	86.3	13.7	2.726	NP	NP	NP
261680	E-KB04-2	82.4	17.6	2.704	NP	NP	NP
261681	E-KB04-3	78.3	21.7	2.698	NP	NP	NP
261682	E-KB04-4	79.7	20.3	2.664	NP	NP	NP
261683	E-KB04-5	47.7	52.3	2.633	72	31	41
261685	E-KB04-6	28.3	71.7	2.577	174	59	115
261686	E-KB04-7	34.4	65.6	2.586	128	49	79
261687	E-KB04-8	37.9	62.1	2.584	121	45	76
261688	RS-KB04	77.0	23.0	2.682	NP	NP	NP

Reviewed By
Balaji Balachandran

MACTEC Engineering and Consulting Inc.
3901 Carmichael Avenue
Jacksonville, FL 32207
(904)396-5173

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.2	91.4	8.4		SP-SM	A-3		

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}	0.240		
D_{30}	0.130		
D_{10}	0.0811		
	COEFFICIENTS		
C_c	0.88		
C_u	2.95		

SIEVE number size	PERCENT FINER ○		
#4	99.8		
#10	98.8		
#20	95.8		
#40	77.7		
#60	61.7		
#140	19.9		
#200	8.4		
#230	7.1		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some medium to fine sand sized shell fragments, dark gray and tan

REMARKS:

○

○ Source: RS-KB04

Sample No.: 261688

MACTEC ENGINEERING. AND CONSULTING, INC.

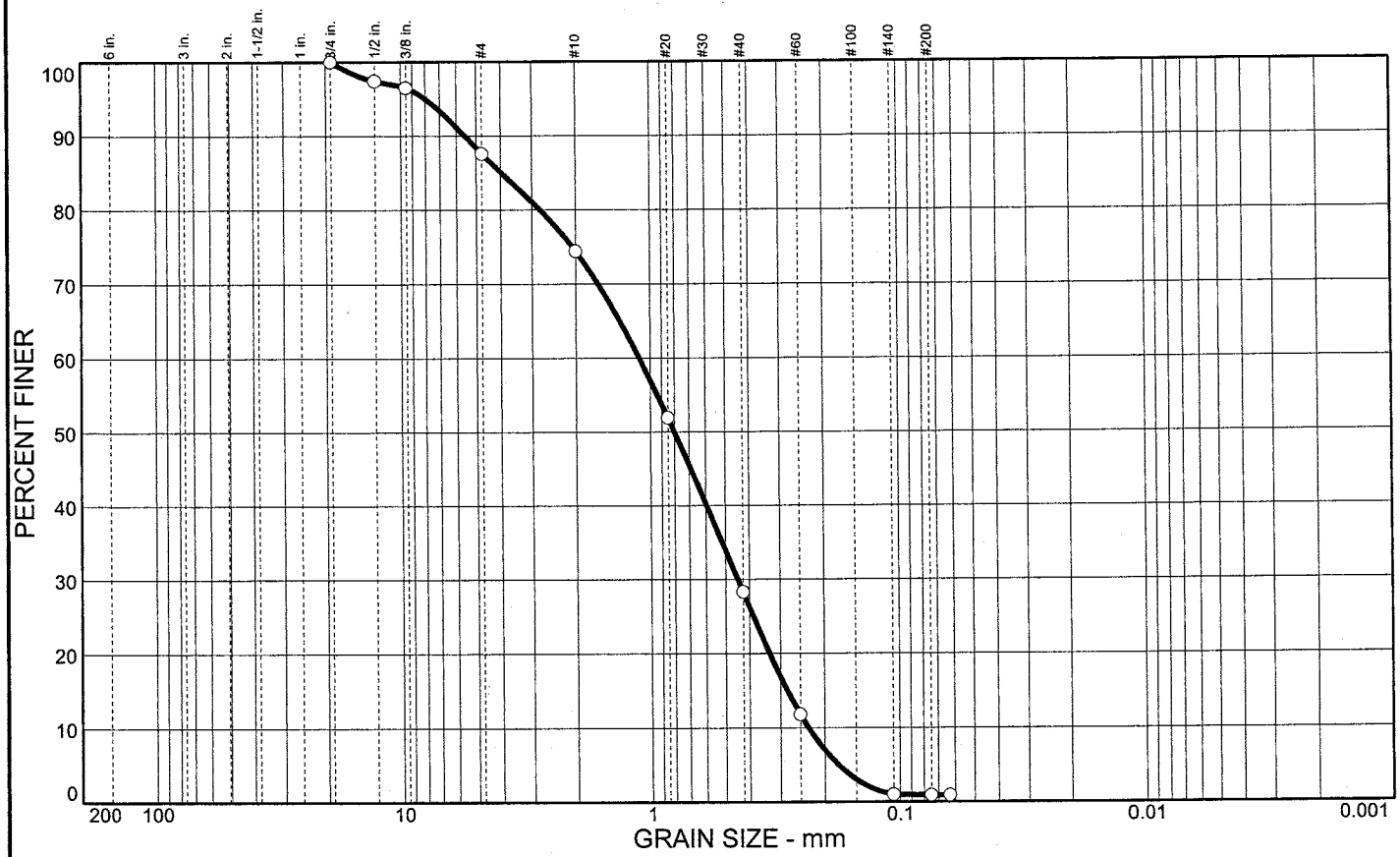
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B·B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		12.4	86.7	0.9		SP	A-1-b	NP	NP

SIEVE inches size	PERCENT FINER ○		
.75	100.0		
.5	97.4		
.375	96.5		
	GRAIN SIZE		
D_{60}	1.11		
D_{30}	0.446		
D_{10}	0.232		
	COEFFICIENTS		
C_c	0.78		
C_u	4.79		

SIEVE number size	PERCENT FINER ○		
#4	87.6		
#10	74.4		
#20	51.9		
#40	28.3		
#60	11.8		
#140	1.0		
#200	0.9		
#230	0.9		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some fine gravel to fine sand sized shell fragments, light tan and gray

REMARKS:

○

○ Source: E-KB04-1

Sample No.: 261679

MACTEC ENGINEERING. AND CONSULTING, INC.

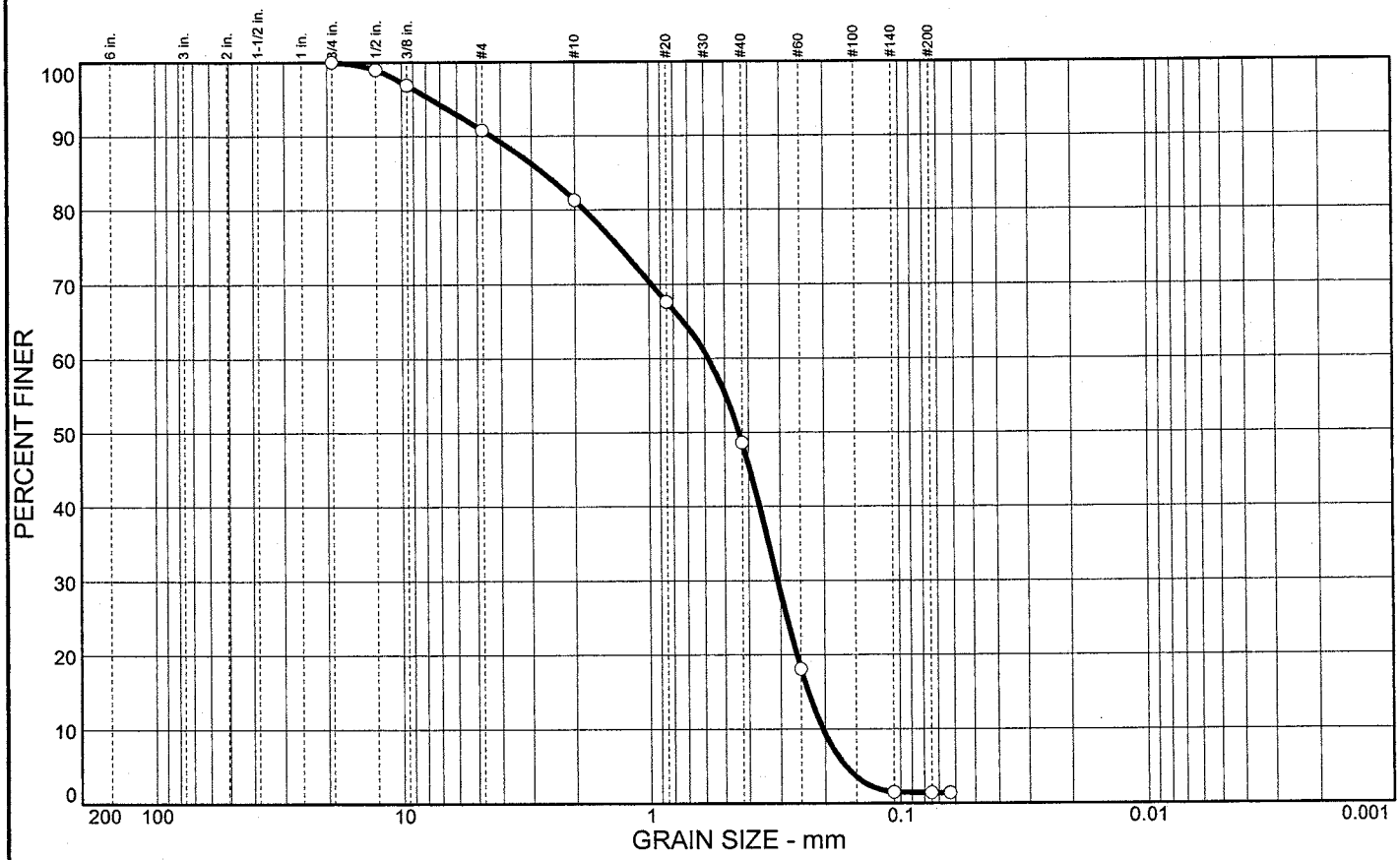
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		9.2	89.4	1.4		SP	A-1-b		

SIEVE inches size	PERCENT FINER ○		
.75	100.0		
.5	99.0		
.375	96.9		
	GRAIN SIZE		
D_{60}	0.580		
D_{30}	0.309		
D_{10}	0.204		
	COEFFICIENTS		
C_c	0.81		
C_u	2.85		

SIEVE number size	PERCENT FINER ○		
#4	90.8		
#10	81.3		
#20	67.6		
#40	48.6		
#60	18.1		
#140	1.5		
#200	1.4		
#230	1.4		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some fine gravel to fine sand sized shell fragments, light tan and gray

REMARKS:

○

○ Source: E-KB04-2

Sample No.: 261680

MACTEC ENGINEERING. AND CONSULTING, INC.

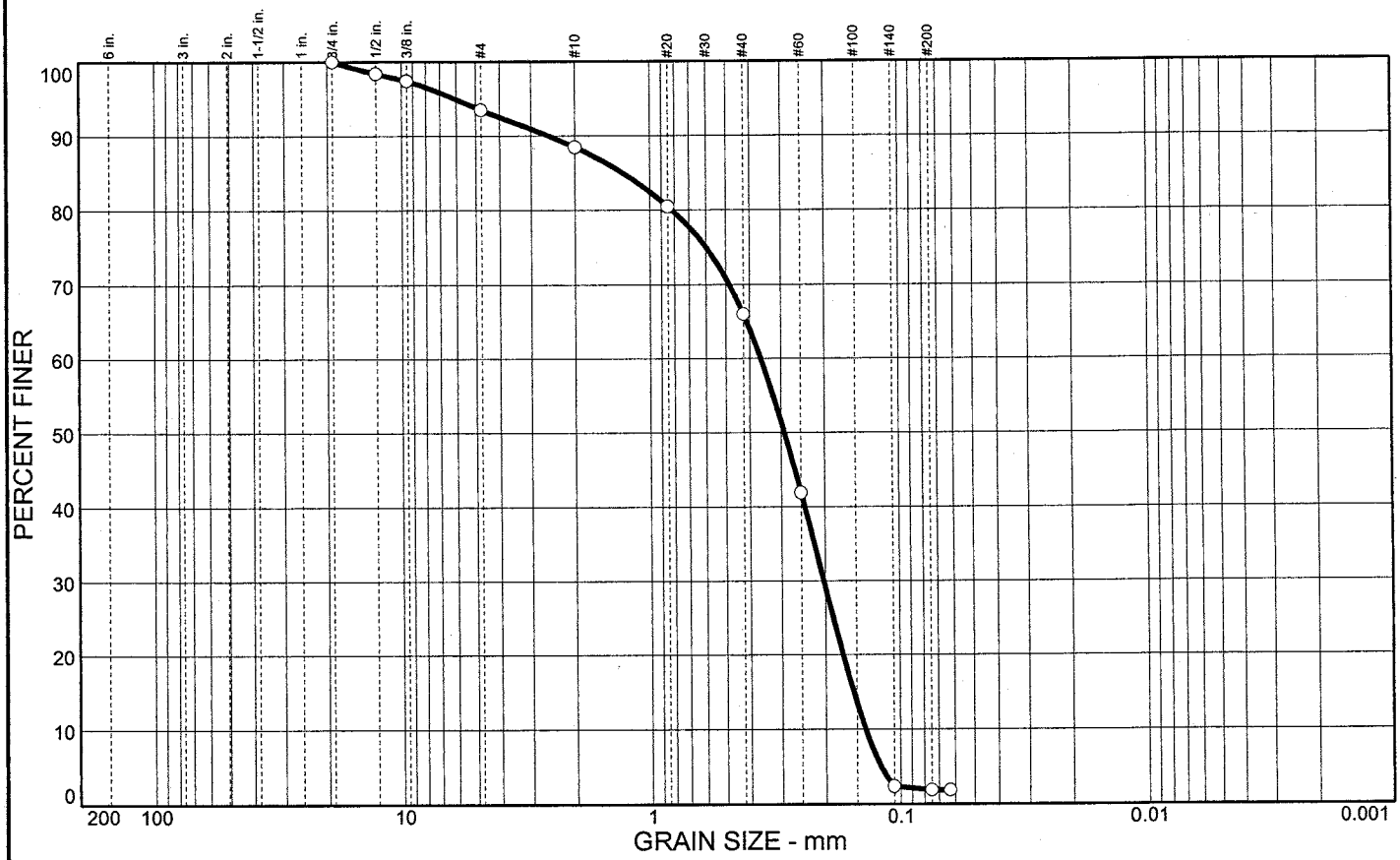
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		6.5	91.6	1.9		SP	A-3		

SIEVE inches size	PERCENT FINER ○		
.75	100.0		
.5	98.4		
.375	97.4		
GRAIN SIZE			
D_{60}	0.362		
D_{30}	0.203		
D_{10}	0.138		
COEFFICIENTS			
C_c	0.82		
C_u	2.62		

SIEVE number size	PERCENT FINER ○		
#4	93.5		
#10	88.5		
#20	80.5		
#40	66.0		
#60	41.9		
#140	2.4		
#200	1.9		
#230	1.9		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, some fine gravel to fine sand sized shell fragments, light tan and gray

REMARKS:

○

○ Source: E-KB04-3

Sample No.: 261681

MACTEC ENGINEERING. AND CONSULTING, INC.

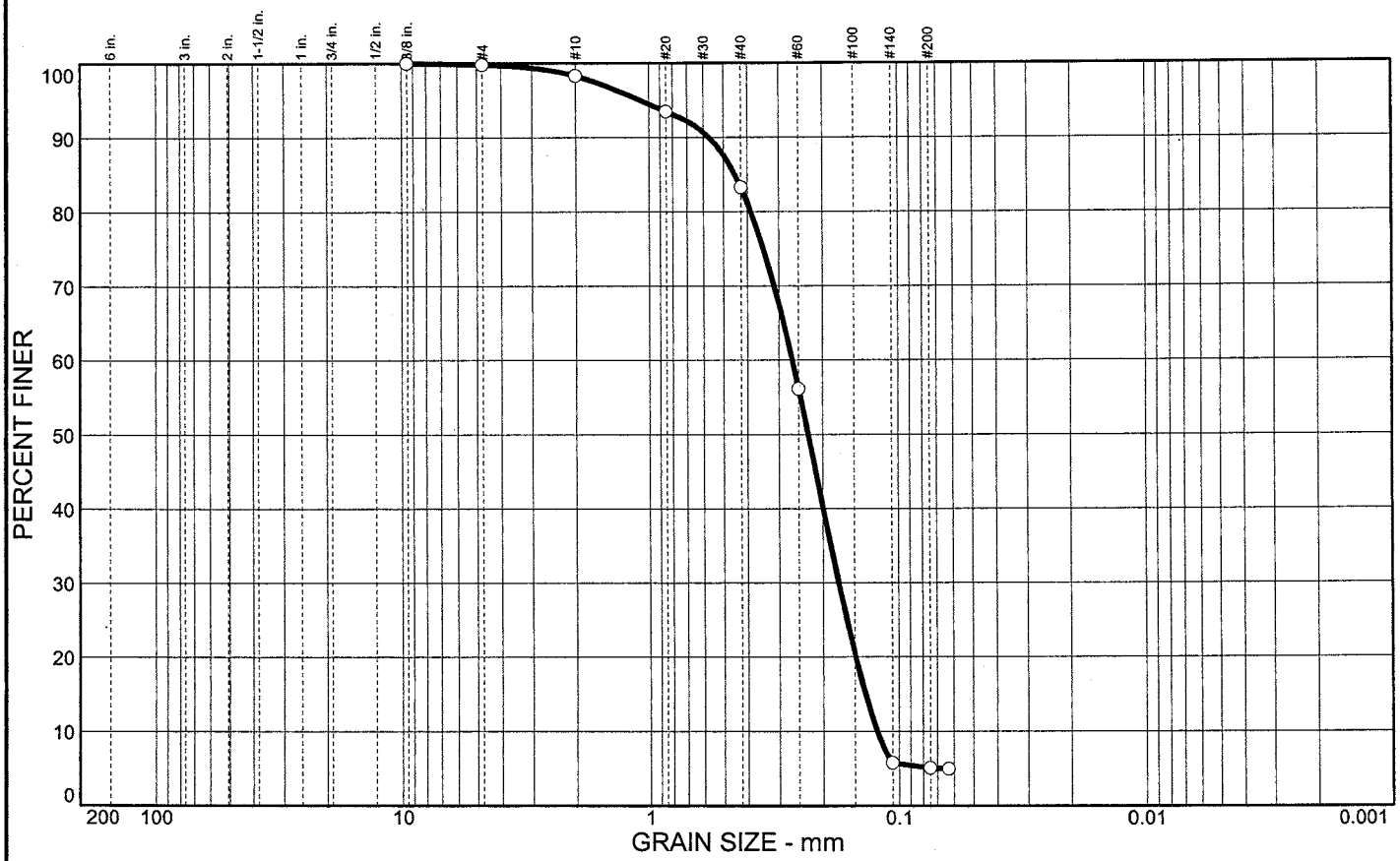
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.2	94.7	5.1		SP-SM	A-3		

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}	0.265		
D_{30}	0.173		
D_{10}	0.122		
	COEFFICIENTS		
C_c	0.93		
C_u	2.17		

SIEVE number size	PERCENT FINER ○		
#4	99.8		
#10	98.3		
#20	93.5		
#40	83.3		
#60	56.1		
#140	5.8		
#200	5.1		
#230	5.0		

SOIL DESCRIPTION

○ SAND, medium to fine quarts, few medium to fine sand sized shell fragments, few silt, dark gray and tan

REMARKS:

○

○ Source: E-KB04-4

Sample No.: 261682

MACTEC ENGINEERING. AND CONSULTING, INC.

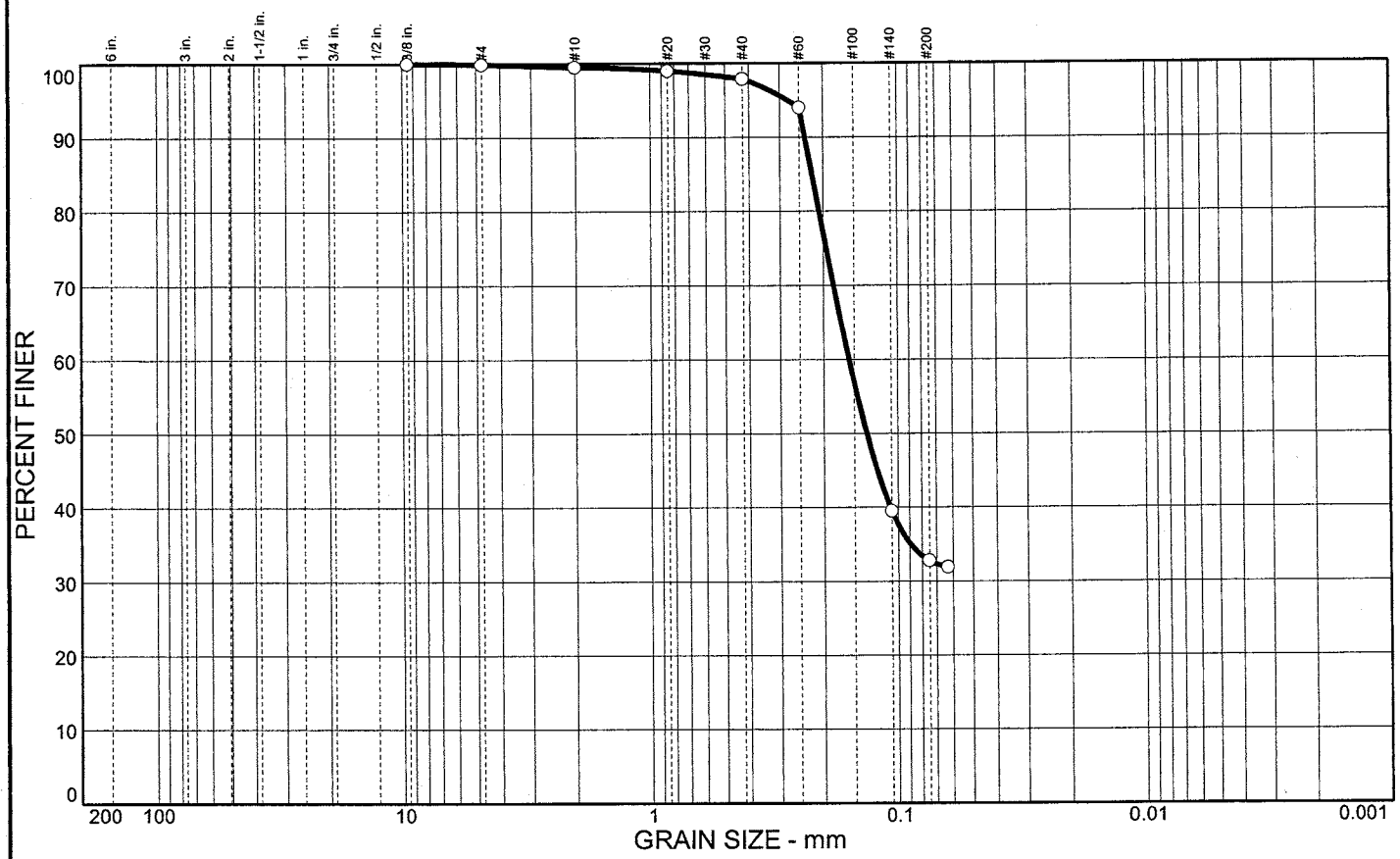
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.1	67.1	32.8		SC	A-2-7(6)	31	72

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}	0.157		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	99.9		
#10	99.5		
#20	99.0		
#40	97.9		
#60	94.0		
#140	39.5		
#200	32.8		
#230	31.9		

SOIL DESCRIPTION

○ SAND, fine quartz, some clay, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-5

Sample No.: 261683

MACTEC ENGINEERING. AND CONSULTING, INC.

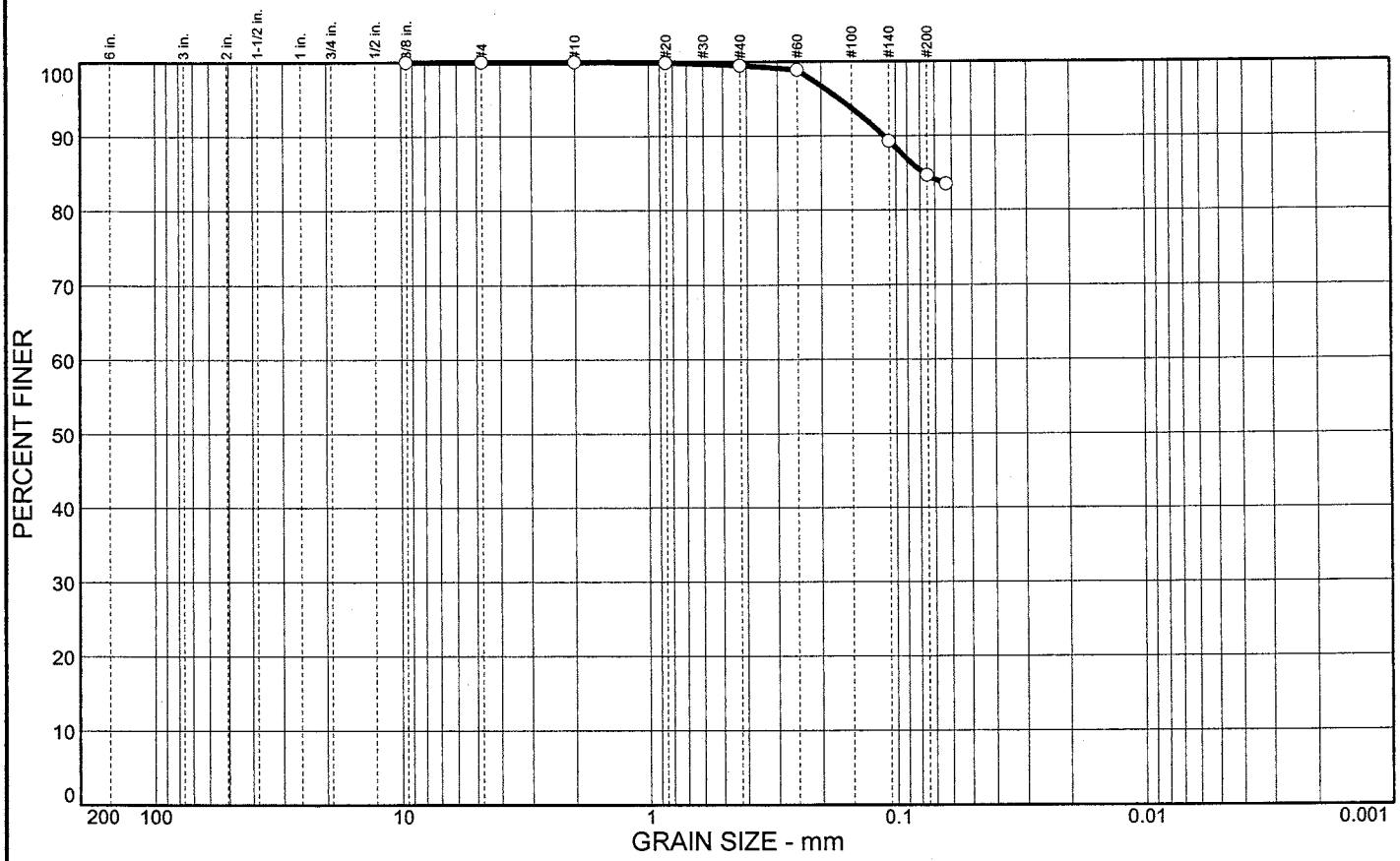
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			15.3	84.7		CH	A-7-5(117)	59	174

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
GRAIN SIZE			
D_{60}			
D_{30}			
D_{10}			
COEFFICIENTS			
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.5		
#60	98.9		
#140	89.3		
#200	84.7		
#230	83.5		

SOIL DESCRIPTION

○ CLAY, little fine quartz sand, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-6

Sample No.: 261685

MACTEC ENGINEERING. AND CONSULTING, INC.

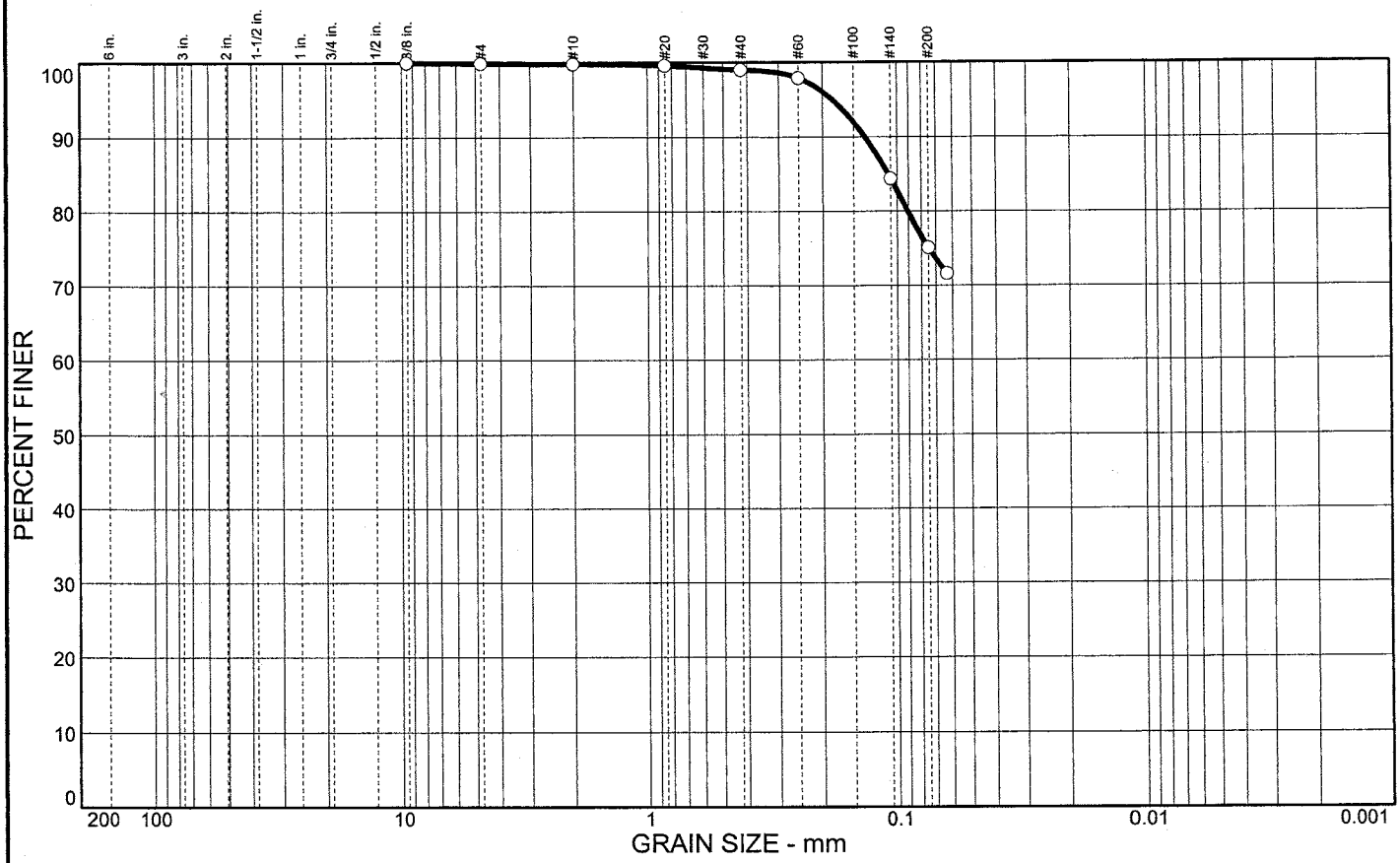
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.1	24.8	75.1		CH	A-7-5(67)	49	128

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}			
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	99.9		
#10	99.8		
#20	99.6		
#40	99.0		
#60	97.9		
#140	84.4		
#200	75.1		
#230	71.6		

SOIL DESCRIPTION

○ CLAY, little fine quartz sand, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-7

Sample No.: 261685

MACTEC ENGINEERING. AND CONSULTING, INC.

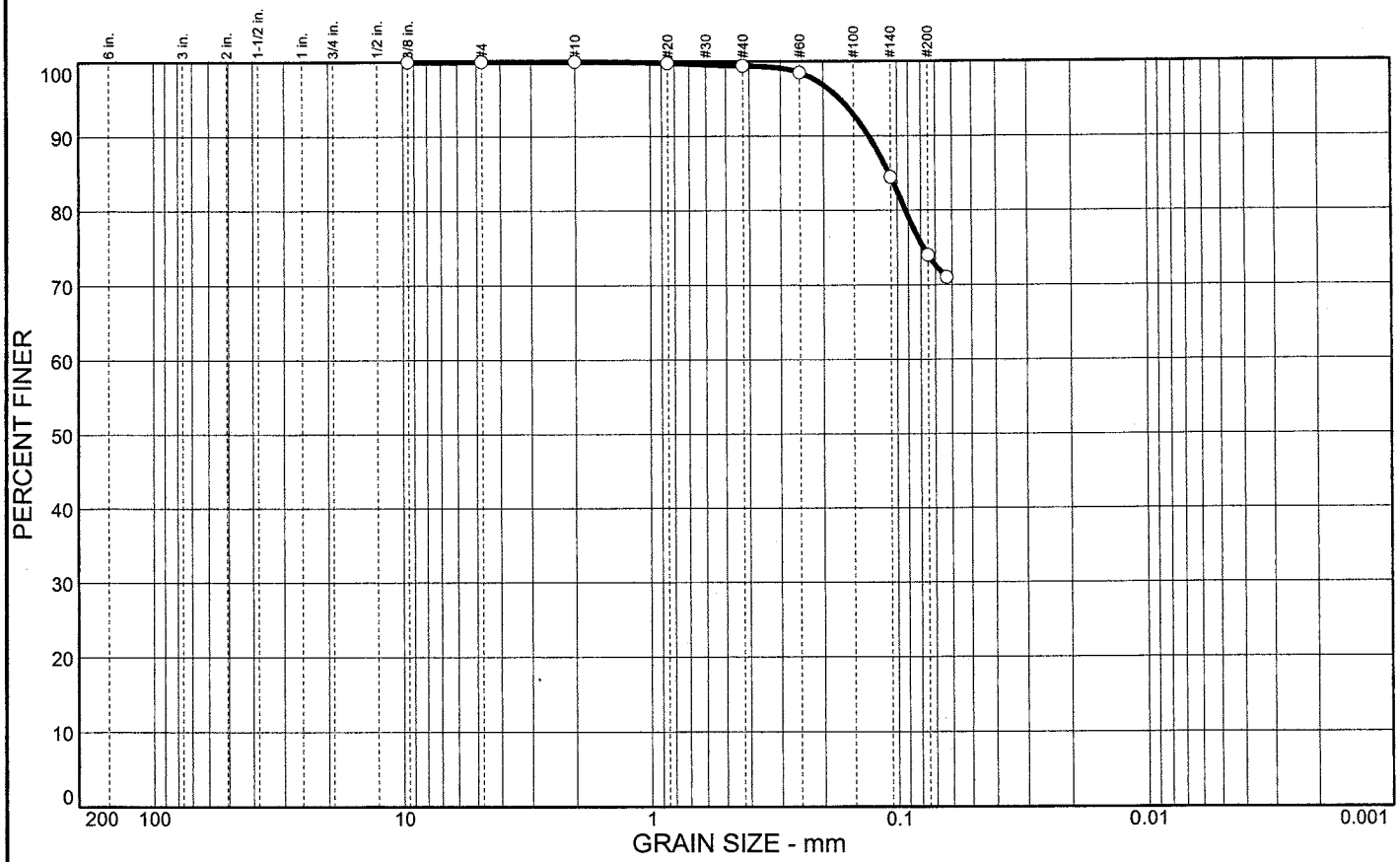
Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

Reviewed By: B.B

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			26.0	74.0		CH	A-7-5(63)	45	121

SIEVE inches size	PERCENT FINER ○		
.375	100.0		
	GRAIN SIZE		
D_{60}			
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.4		
#60	98.5		
#140	84.5		
#200	74.0		
#230	71.0		

SOIL DESCRIPTION

○ CLAY, little fine quartz sand, trace fine sand sized shell fragments, dark gray

REMARKS:

○

○ Source: E-KB04-8

Sample No.: 261687

MACTEC ENGINEERING. AND CONSULTING, INC.

Client: PPB Environmental Services

Project: PPB-USACE King's Bay 2004

Project No.: 6063-04-0017-0900

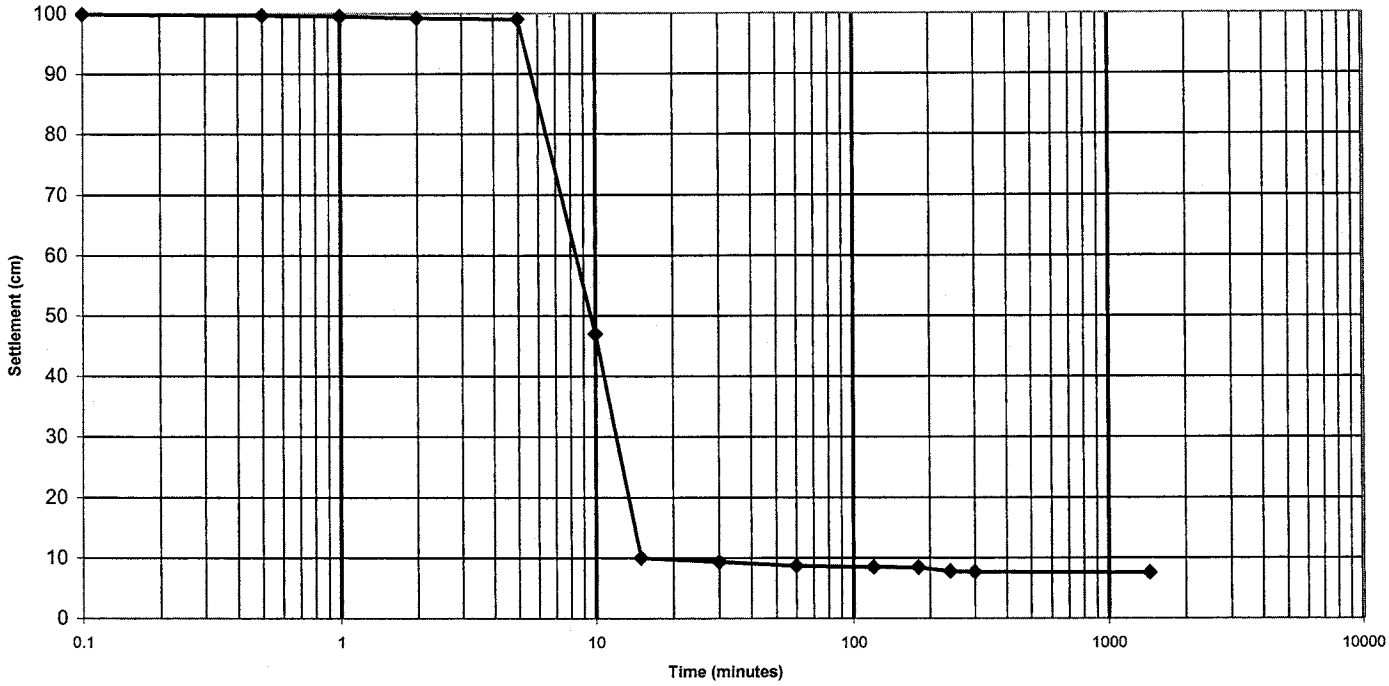
Reviewed By: B.B

MACTEC

REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION RS-KB04
SAMPLE NO: 261688
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	30	9.4
0.5	99.7	60	8.7
1	99.5	120	8.5
2	99.2	180	8.4
5	99.0	240	7.8
10	47.0	300	7.7
15	10.0	1440	7.6

Final Concentration: 1315.8 g/L

MACTEC Engineering and Consulting, Inc.
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Jacksonville, Florida 32207
(904) 396-5173

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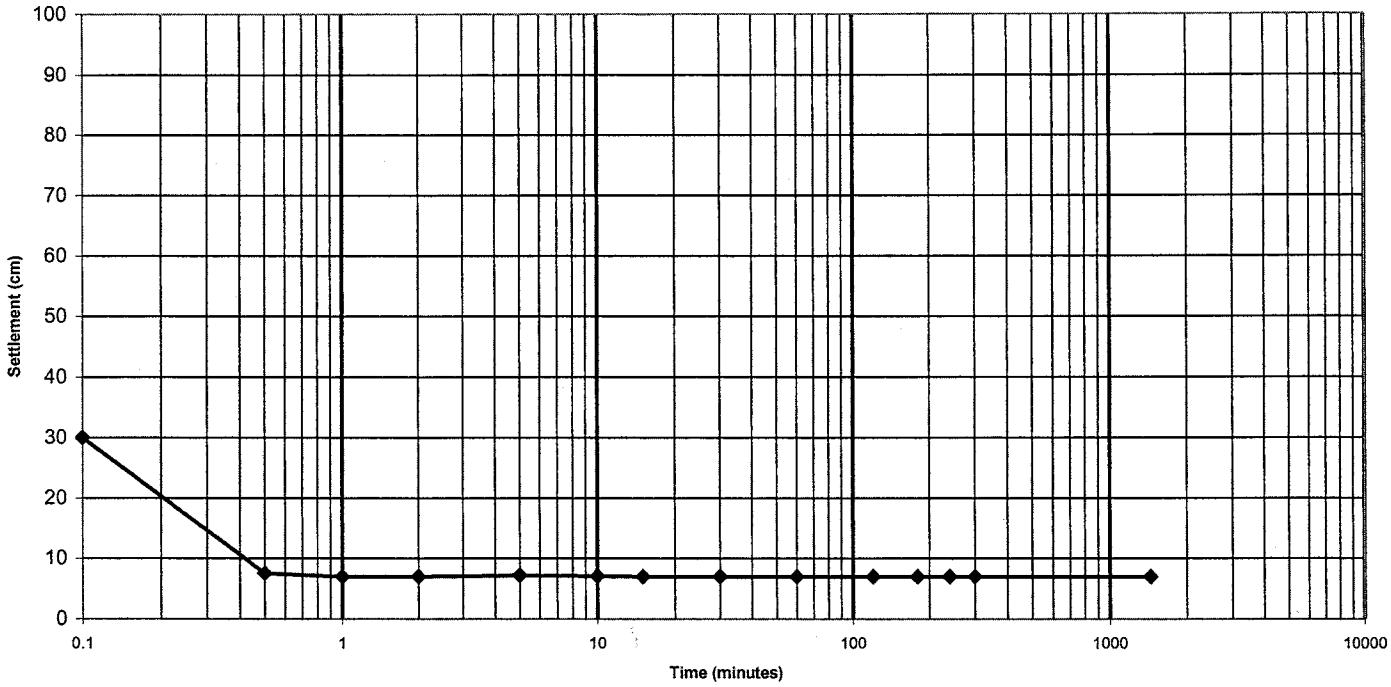
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-1
SAMPLE NO: 261679
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	30.0	30	7.0
0.5	7.5	60	7.0
1	7.0	120	7.0
2	7.0	180	7.0
5	7.2	240	7.0
10	7.1	300	7.0
15	7.0	1440	7.0

Final Concentration: 1428.6 g/L

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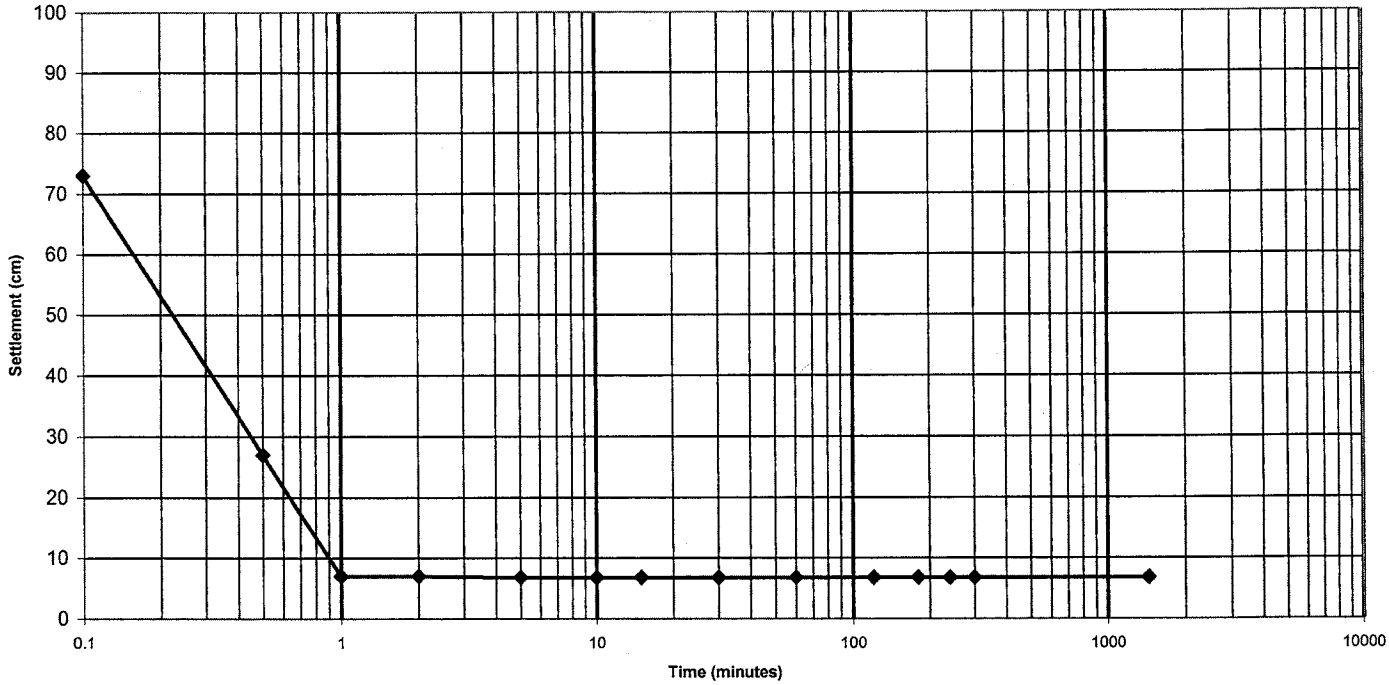
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-2
SAMPLE NO: 261680
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	73.0	30	6.8
0.5	27.0	60	6.8
1	7.0	120	6.8
2	7.0	180	6.8
5	6.8	240	6.8
10	6.8	300	6.8
15	6.8	1440	6.8

Final Concentration: 1470.6 g/L

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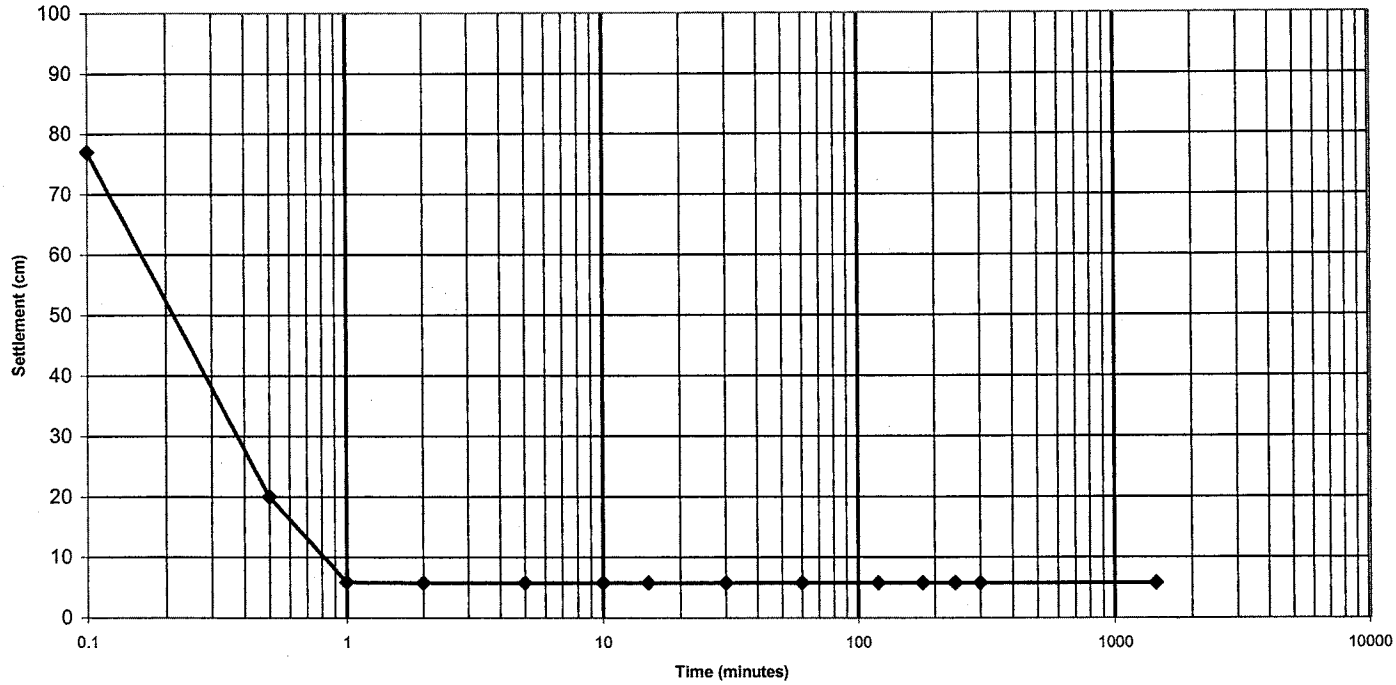
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-3
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261681
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	77.0	30	5.8
0.5	20.0	60	5.8
1	5.9	120	5.8
2	5.8	180	5.8
5	5.8	240	5.8
10	5.8	300	5.8
15	5.8	1440	5.8

Final Concentration: 1724.1 g/L

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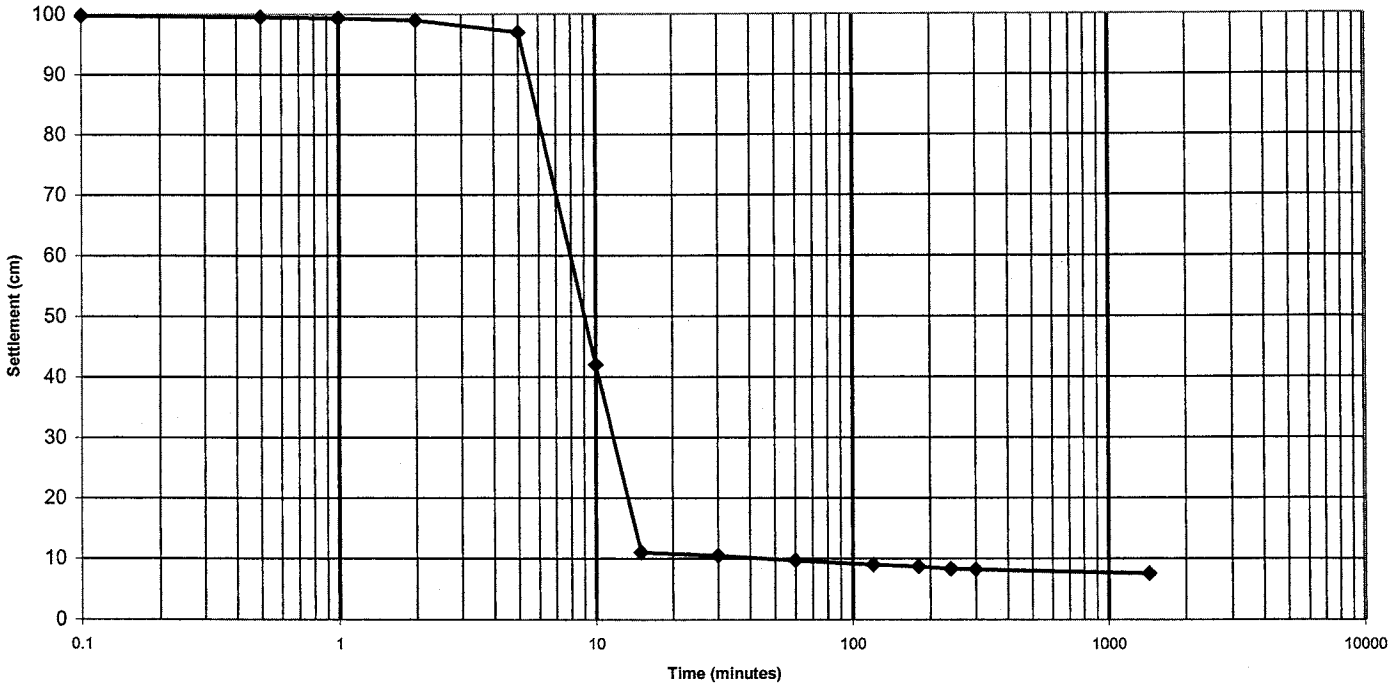
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-4
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261682
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	30	10.5
0.5	99.5	60	9.7
1	99.3	120	9.0
2	99.0	180	8.7
5	97.0	240	8.3
10	42.0	300	8.2
15	11.0	1440	7.6

Final Concentration: 1315.8 g/L

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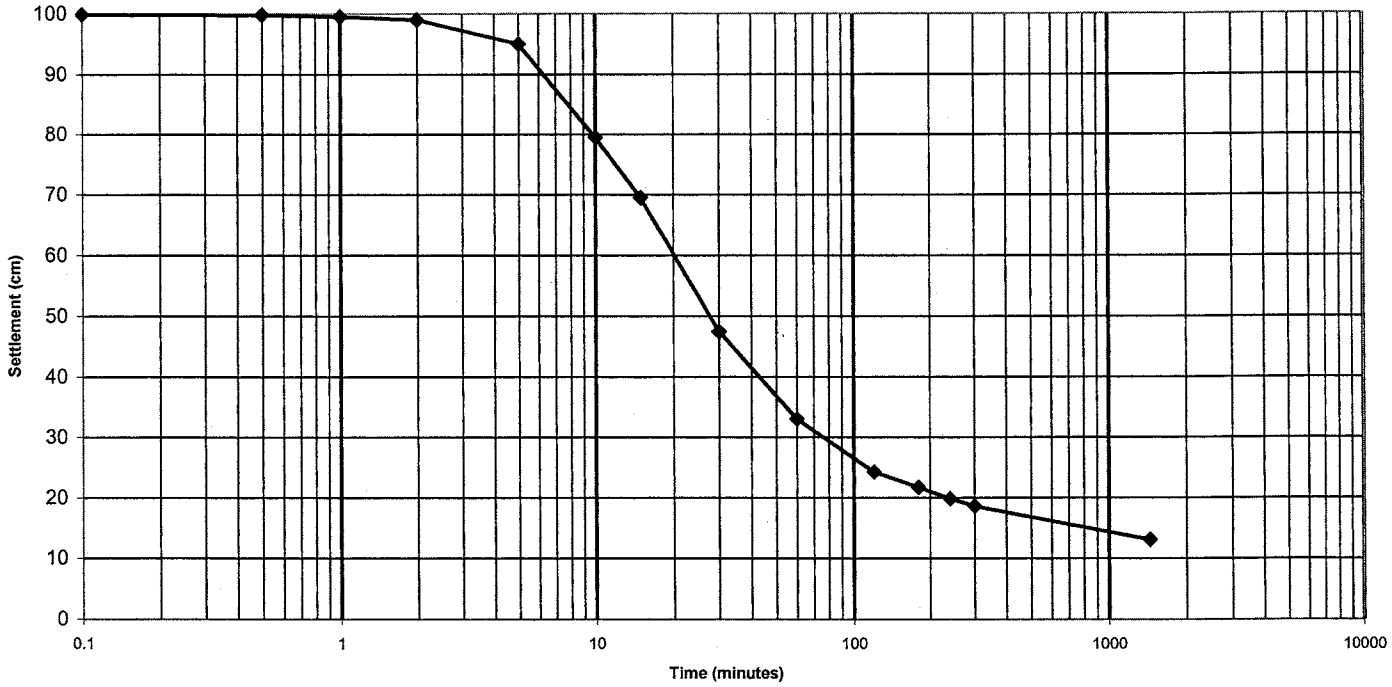
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-5
SAMPLE NO: 261683
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	30	47.5
0.5	99.8	60	33.0
1	99.5	120	24.2
2	99.0	180	21.7
5	95.0	240	19.8
10	79.5	300	18.6
15	69.5	1440	13.1

Final Concentration: 763.36 g/L

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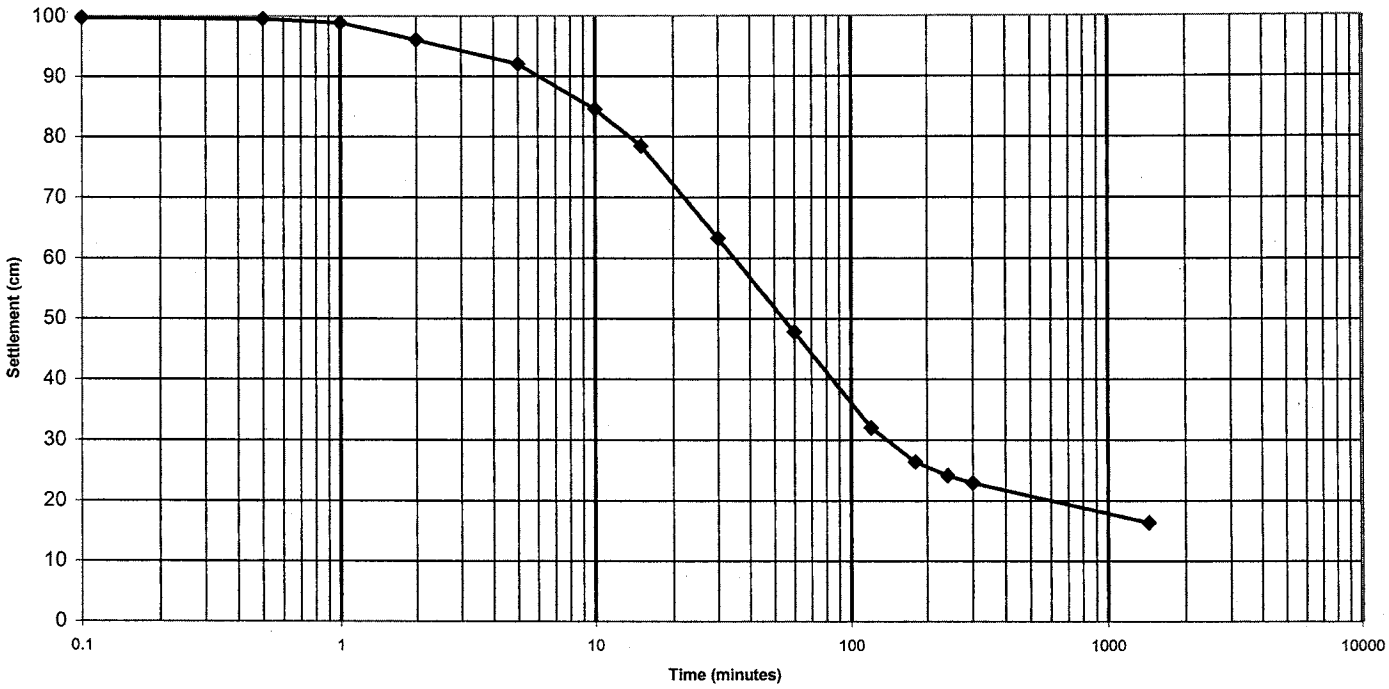
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-6
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261685
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	30	63.3
0.5	99.5	60	47.8
1	98.9	120	32.0
2	96.0	180	26.4
5	92.0	240	24.1
10	84.5	300	22.9
15	78.5	1440	16.3

Final Concentration: 613.5 g/L

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(904) 396-5173

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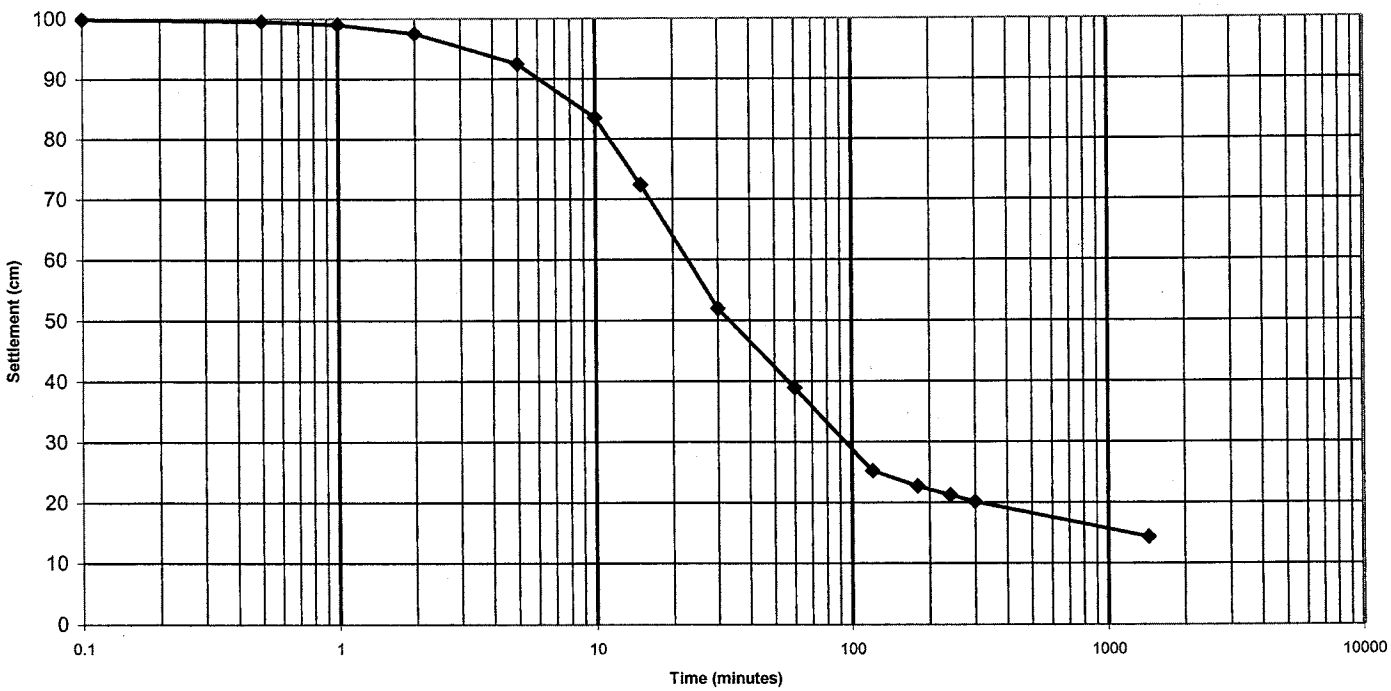
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO: 6063-04-0017-0900
PROJECT: USACOE-Kings Bay 2004
CLIENT: PPB Environmental

STATION E-KB04-7
SAMPLE NO: 261686
CONCENTRATION: 100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.9	30	52.0
0.5	99.5	60	38.9
1	99.0	120	25.2
2	97.5	180	22.7
5	92.5	240	21.2
10	83.5	300	20.1
15	72.4	1440	14.3

Final Concentration: 699.3 g/L

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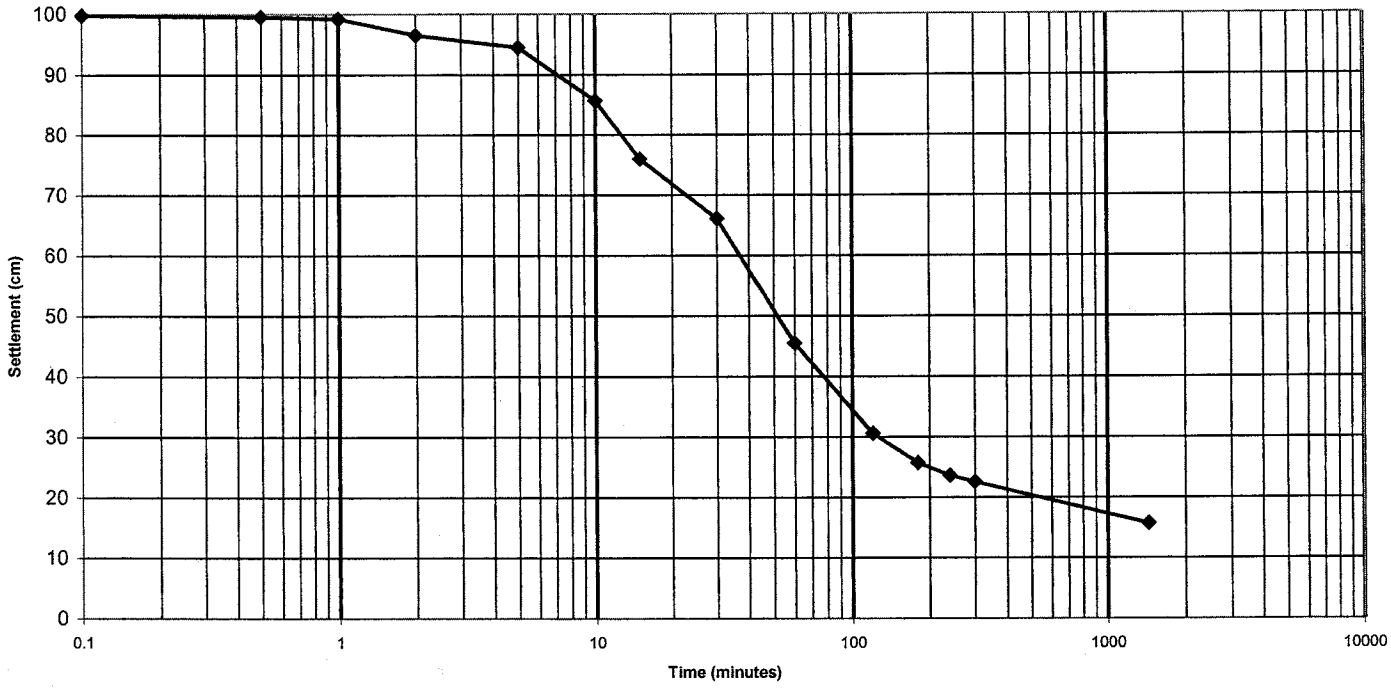
REPORT OF SETTLING RATE TESTING

MACTEC PROJECT NO:	6063-04-0017-0900	STATION	E-KB04-8
PROJECT:	USACOE-Kings Bay 2004	SAMPLE NO:	261687
CLIENT:	PPB Environmental	CONCENTRATION:	100 g/L



TIME (min)	INTERFACE (cm)	TIME (min)	INTERFACE (cm)
0.1	99.8	30	66.1
0.5	99.5	60	45.5
1	99.2	120	30.6
2	96.5	180	25.7
5	94.5	240	23.6
10	85.7	300	22.5
15	76.0	1440	15.7

Final Concentration: 636.94 g/L

MACTEC Engineering and Consulting, Inc.
3901 Carmichael Avenue
Jacksonville, Florida 32207
(904) 396-5173

MACTEC

Project: USACOE Kings Bay 2004

Project Number: 6063-04-0017-0900

Client: PPB Environmental

Date: December 22, 2004

Specific Gravity Calculation: DryWt/(DryWt+(PycCalib-PcySoil)

Sample	Pycnometer	Cal. Temp	Cal. Den.	Pycnometer Dry	Pycnometer Full	Temp	Density	Calibrated Pycnometer Wt	Specific Gravity
E-KB04-1	c	21.44	0.99791	181.57	680.49	19.0	0.9984	680.74	2.726
E-KB04-2	jg	21.44	0.99791	173.33	672.19	19.0	0.9984	672.44	2.704
E-KB04-3	f	21.44	0.99791	171.52	670.33	18.8	0.9985	670.60	2.698
E-KB04-4	jt	21.44	0.99791	182.87	681.76	19.0	0.9984	682.01	2.664
E-KB04-5	l	21.44	0.99791	166.81	665.50	19.0	0.9984	665.75	2.633
E-KB04-6	lb	21.44	0.99791	181.30	680.18	19.0	0.9984	680.43	2.577
E-KB04-7	mc	21.44	0.99791	176.36	675.21	19.0	0.9984	675.46	2.586
E-KB04-8	o	21.44	0.99791	176.52	675.19	19.0	0.9984	675.44	2.584
RS-KB04	P	21.44	0.99791	170.09	668.81	19.0	0.9984	669.06	2.682
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A

Fine Material

SSD Wt	Dry Wt	Pyc+Sample Wt	Tare #	Tare Wt	Tare+Sample
	91.22	738.49		223.26	314.48
	104.36	738.2		222.76	327.12
	167.03	775.73		223.51	390.54
	153.36	777.79		223.45	376.81
	106.65	731.9		223.98	330.63
	45.52	708.28		222.71	268.23
	57.11	710.49		222.64	279.75
	57.76	710.85		231.26	289.02
	154.45	765.93		121	275.45
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	0				

APPENDIX F

Sediment and Elutriate
Laboratory Data Reports

1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 ph (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

January 26, 2005

Service Request No: K2409889

Bryan Cotter
PPB Environmental Laboratories, Inc.
6821 SW Archer Road
Gainesville, FL 32608

RE: USACE King's Bay 2004

Dear Bryan:

Enclosed are the results of the sample(s) submitted to our laboratory on December 15, 2004. For your reference, these analyses have been assigned our service request number K2409889.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jacky
Project Chemist

HJ/jeb

NELAP Accredited ACIL Seal of Excellence Award

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	PPB Environmental, Inc.	**Service Request No.:**	K2409889
Project:	USACE King's Bay 2004	**Date Received:**	12/15/04
Sample Matrix:	Sediment		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Ten sediment samples were received for analysis at Columbia Analytical Services on 12/15/04. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Total Metals

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Iron for sample E-KB04-1 was outside the CAS control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supports this. Since the unspiked samples contain high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside normal CAS control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicate the analysis was in control. No further corrective action was appropriate.

Relative Percent Difference Exceptions:
The Relative Percent Difference (RPD) for the replicate analysis of Aluminum and Iron in sample E-KB04-1 was outside the normal CAS control limits. The variability in the results is attributed to the heterogeneous character of the sample. The sample contained relatively large amounts of rocks and shell fragments, which created difficulties during the homogenization process. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

Organotin Compounds

Matrix Spike Recovery Exceptions:
The matrix spike recovery of n-Butyltin for sample E-KB04-4MS was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. The matrix spike outlier suggests a potential low bias in this matrix. No further corrective action was appropriate.

Approved by HS **Date** 1/27/05

Relative Percent Difference Exceptions:
The Relative Percent Difference (RPD) for the following all analytes in the replicate matrix spike analyses of E-KB04-4MS/DMS were outside control criteria. In general, the RPD was relatively high for all spiked compounds, which indicates a low bias in the Matrix Spike (MS). All spike recoveries in the DMS, and associated Laboratory Control Sample (LCS) were within acceptance limits, indicating the analytical batch was in control. No further corrective action was appropriate.

Oil and Grease by EPA Method 9071

No anomalies associated with the analysis of these samples were observed.

Organochlorine Pesticides by EPA Method 8081A

Elevated Method Detection Limits:
The detection limit is elevated for a few analytes in several samples. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the detection limit. The results are flagged to indicate the matrix interference.

Elevated Method Reporting Limit:
The reporting limit is elevated for Chlordane in sample E-KB04-5 dupe. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the reporting limit. The result is flagged to indicate the matrix interference.

Method Blank Exceptions:
The Method Blank KWG0420171-7 contained low levels of Methoxychlor above the Method Reporting Limit (MRL). In accordance with CAS QA/QC policy, all sample results less than twenty times the level found in the Method Blank are flagged as estimated. (See NCAR 008svg)

Sample Confirmation Notes:
The confirmation comparison criteria of 40% difference for Methoxychlor was exceeded in samples E-KB04-3, E-KB04-4, and E-KB04-5 dupe. The lower of the two values was reported because of an apparent interference on the alternate column that produced the higher value.

The confirmation comparison criteria of 40% difference for Endrin Aldehyde, and 4,4'-DDD was exceeded in samples E-KB04-5 dupe, and E-KB04-7 respectively. The higher of the two values is reported because no evidence of a matrix interference was observed.

PCB Aroclors by EPA Method 8082

No anomalies associated with the analysis of these samples were observed.

PCB Congeners by EPA Method 8082

Continuing Calibration Verification (CCV) Exceptions:
The primary evaluation criterion was exceeded for PCB 209 in CCV 0103F014 and 0103F025. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the average percent recovery of all analytes in the verification standard. The standard meets the alternative evaluation criteria.

Sample Confirmation Notes:
The confirmation comparison criteria are not applicable because at least one of the values is below the Method Reporting Limit (MRL).

Approved by HT **Date** 1/27/05

Elevated Method Reporting Limits:
The reporting limit is elevated for a few analytes in some samples. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the reporting limit. The results are flagged to indicate the matrix interference.

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

Initial Calibration (ICAL) Exceptions:
The primary evaluation criterion was exceeded for the following analytes in ICAL ID CAL4064: 2,6-Dimethylnaphthalene, Fluorene-d10, 2,4,6-Tribromophenol, Fluoranthene-d10, Dibenz(a,h)anthracene. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the mean Relative Standard Deviation (RSD) of all analytes in the calibration. The result of the mean RSD calculation was 10.7%. The calibration meets the alternative evaluation criteria. Note that CAS/Kelso policy does not allow the use of averaging if any analyte in the ICAL exceeds 30% RSD.

Surrogate Exceptions:
The control criteria were exceeded for the Fluoranthene-d10 surrogate in E-KB04-8. A reanalysis was not performed as hold time had significantly expired by the time the problem was detected. No further corrective action was possible.

The control criteria were exceeded for the following surrogate in the replicate matrix spike analyses of sample E-KB04-5: Fluoranthene-d10. The surrogate in question was just within control criteria (1-2%) in both the sample and a duplicate analysis. Additionally, all samples produced recoveries of the first two surrogates that were biased low while the MB, LCS, and DLCS were well within control criteria. This indicates the low recovery is most likely due to sample matrix interference. The surrogate outlier is flagged accordingly. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:
The matrix spike recoveries of 1-Methylnaphthalene and Anthracene for sample E-KB04-5 were outside control criteria because of suspected matrix interference. A Matrix Spike Duplicate (MSD) was also analyzed, but produced similar results. The results of the original analysis are reported. No further corrective action was appropriate.

The recoveries of Fluorene, Phenanthrene, and Fluoranthene for sample E-KB04-5DMS were outside control criteria because of suspected matrix interference. The recoveries in the matrix spike were just within control criteria. The results of the original analysis are reported. No further corrective action was appropriate.

Approved by HC **Date** 1/27/05

Chain of Custody Documentation

ppb
ENVIRONMENTAL LABORATORIES, INC.
6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 · FAX (352) 395-6639

KB04 Sediments Chemistry

CHAIN-OF-CUSTODY RECORD

LW09889

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor CAS-Kelso, WA
		Shipping Method Fed Ex Priority

CLIENT NAME: PPB-USACE Kings Bay 2004
CLIENT PROJECT:
SITE NAME & ADDRESS:
SAMPLERS: (Signature)
LAB REPORT GOES TO (Client contact person): Bryan Cotter

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS: Metals: Al, Sb, As, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Ag, Zn; Pest's; PCB Aroclors; PCB congeners; PAHs; Oil and Grease; TOC; Total Sulfide; Total Organic Tins

PRESERVATION
CF Chilled-Filtered
SF Sulfuric-Filtered
NF Nitric-Filtered
C Chilled
S Sulfuric
N Nitric
B Basic/NaOH
Z Zinc
T Thiosulfate
H HCL
Ot Other (see Remarks)

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Metals								Lab I.D. Number
261679	12/7/04	1615	✓		E-KB04-1	Sed	3	✓	✓	✓	✓	✓	✓	✓	✓	
680	12/9/04	~~1000~~ 0915			-2											
681		0830			-3											
682		0750			-4											
683	12/8/04	1630			-5											
684		1630			-5 dupe											
685		1400			-6											
686		1200			-7											
687		1110			-8											
688		0845			RS-KB04											

Precleaned Containers / Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
		RC	12/13/04
Relinquished by: (Signature) PAC	12/14/04 1600	Received by: (Signature) CASX Tracy Slade	Date / Time 12/15/04 1050
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Please use station location as client ID

See Attached SOW for analyses

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

Columbia Analytical Services Inc.

Cooler Receipt and Preservation Form

Project/Client PPB Work Order K240 9889

Cooler received on 12/15/04 and opened on 12/15/04 by TKSlack

1. Were custody seals on outside of coolers? Y N
   If yes, how many and where? 1 front
2. Were custody seals intact? Y N
3. Were signature and date present on the custody seals? Y N
4. Is the shipper's airbill available and filed? If no, record airbill number: Y N
5. COC#
   Temperature of cooler(s) upon receipt: (°C) -0.1
   Temperature Blank: (°C) na - broken
   Were samples hand delivered on the same day as collection? Y N
6. Were custody papers properly filled out (ink, signed, etc.)? Y N
7. Type of packing material present ice - cardboard - bags - mesh
8. **Did all bottles arrive in good condition (unbroken)?** Y N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)? Y N
10. Did all bottle labels and tags agree with custody papers? Y N
11. **Were the correct types of bottles used for the tests indicated?** Y N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y~~ ~~N~~
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~ ~~N~~
14. Did the bottles originate from CAS/K or a branch laboratory? Y N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** ~~Y~~ ~~N~~
16. Was C12/Res negative? ~~Y~~ ~~N~~

Explain any discrepancies:

RESOLUTION:

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Total Solids

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 200
Sample Matrix: Sediment

Service Request: K2409889

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
E-KB04-1	K2409889-001	12/07/2004	12/15/2004	12/17/2004	80.5	
E-KB04-2	K2409889-002	12/09/2004	12/15/2004	12/17/2004	76.7	
E-KB04-3	K2409889-003	12/09/2004	12/15/2004	12/17/2004	77.2	
E-KB04-4	K2409889-004	12/09/2004	12/15/2004	12/17/2004	68.9	
E-KB04-5	K2409889-005	12/08/2004	12/15/2004	12/17/2004	45.4	
E-KB04-5 dupe	K2409889-006	12/08/2004	12/15/2004	12/17/2004	48.5	
E-KB04-6	K2409889-007	12/08/2004	12/15/2004	12/17/2004	27.5	
E-KB04-7	K2409889-008	12/08/2004	12/15/2004	12/17/2004	35.2	
E-KB04-8	K2409889-009	12/08/2004	12/15/2004	12/17/2004	36.4	
RS-KB04	K2409889-010	12/08/2004	12/15/2004	12/17/2004	74.1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 200	**Date Collected:**	12/07/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004
		Date Analyzed:	12/17/2004

Duplicate Sample Summary

Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
E-KB04-1	K2409889-001	80.5	78.7	79.6	2	

COLUMBIA ANALYTICAL SERVICES, INC.

EPA Method 160.3 - Total Solids

Group ID:	KWG0420029			**Reviewed By:**	[illegible]
Analyst:	RMcKee				
Date Acquired:	12/17/2004 16:45	**Oven TempStart:**	103 DEG C	**Date Reviewed:**	12/20/04
Date Completed:	12/20/2004 09:48	**Oven TempEnd:**	105 DEG C		

#	Lab Code	Client ID	Matrix	Tare	Tare+Wet	Tare+Dry	% Solids	QC Ref Sample	Comments
1	K2409508-001	Pinchips/Sawdust Composite	MISC	1.23g	2.27g	2.2474g	97.8		
2	K2409508-002	Hardwood/Softwood Bark Composi te	MISC	1.24g	2.59g	2.5332g	95.8		
3	K2409889-001	E-KB04-1	SEDIMENT	1.22g	17.52g	14.34g	80.5		
4	K2409889-002	E-KB04-2	SEDIMENT	1.23g	16.16g	12.68g	76.7		
5	K2409889-003	E-KB04-3	SEDIMENT	1.23g	16.57g	13.08g	77.2		
6	K2409889-004	E-KB04-4	SEDIMENT	1.23g	14.55g	10.41g	68.9		
7	K2409889-005	E-KB04-5	SEDIMENT	1.23g	10.96g	5.65g	45.4		
8	K2409889-006	E-KB04-5 dupe	SEDIMENT	1.23g	13.74g	7.30g	48.5		
9	K2409889-007	E-KB04-6	SEDIMENT	1.23g	10.92g	3.89g	27.5		
10	K2409889-008	E-KB04-7	SEDIMENT	1.22g	9.60g	4.17g	35.2		
11	K2409889-009	E-KB04-8	SEDIMENT	1.23g	10.69g	4.67g	36.4		
12	K2409889-010	RS-KB04	SEDIMENT	1.23g	10.88g	8.38g	74.1		
13	K2409890-003	Primary Clarifier 12/14	SLUDGE	1.2146g	12.7095g	4.5065g	28.6		
14	K2409898-001	Biosolids	SLUDGE	1.2301g	8.1011g	2.4980g	18.5		
15	K2409922-003	61757 #3	SEDIMENT	1.2186g	23.8080g	3.4918g	10.1		
16	K2409933-004	SE-121404-MG-001	SEDIMENT	1.22g	14.12g	6.13g	38.1		
17	K2409933-005	SE-121404-MG-002	SEDIMENT	1.22g	10.06g	4.31g	35.0		
18	K2409950-001	TTU04001	SOIL	1.22g	5.48g	4.94g	87.3		
19	K2409950-002	TTU04002	SOIL	1.24g	6.12g	5.49g	87.1		
20	K2409950-003	TTU04006	SOIL	1.23g	12.39g	9.39g	73.1		
21	K2409950-004	TTU04005	SOIL	1.24g	10.60g	8.58g	78.4		
22	K2409950-005	TTU04007	SOIL	1.23g	6.93g	6.33g	89.5		
23	K2409950-006	TTU04008	SOIL	1.24g	8.93g	8.55g	95.1		
24	K2409950-009	TTU04009	SOIL	1.23g	6.93g	6.07g	84.9		
25	K2409950-010	TTU04012	SOIL	1.25g	8.26g	7.12g	83.7		
26	K2409950-011	TTU04010	SOIL	1.24g	8.16g	7.36g	88.4		

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Group ID:	KWG0420029				
Analyst:	RMcKee			**Reviewed By:**	[illegible]
Date Acquired:	12/17/2004 16:45	**Oven TempStart:**	103 DEG C	**Date Reviewed:**	12/20/04
Date Completed:	12/20/2004 09:48	**Oven TempEnd:**	105 DEG C		

#	Lab Code	Client ID	Matrix	Tare	Tare+Wet	Tare+Dry	% Solids	QC Ref Sample	Comments
27	K2409950-012	TTU04011	SOIL	1.23g	8.24g	7.48g	89.2		
28	K2409950-013	TTU04004	SOIL	1.23g	6.57g	5.65g	82.8		
29	K2409950-014	TTU04003	SOIL	1.23g	6.59g	5.60g	81.5		
30	K2409951-001	North	SOIL	1.22g	7.31g	4.90g	60.4		
31	K2409951-002	South	SOIL	1.22g	7.95g	5.14g	58.2		
32	K2409951-003	East	SOIL	1.22g	5.27g	3.10g	46.4		
33	K2409951-004	West	SOIL	1.21g	8.88g	5.70g	58.5		
34	K2409954-001	AMW-Cuttings	SOIL	1.21g	13.00g	10.74g	80.8		
35	K2409955-001	PA-C-1	SLUDGE	1.22g	12.99g	2.92g	14.4		
36	K2409955-002	PA-OSU	SOIL	1.22g	10.51g	9.29g	86.9		
37	K2409955-003	HV-1	SOIL	1.22g	12.96g	12.24g	93.9		
38	K2409966-001	D2-30-40-45	SEDIMENT	30.2540g	45.7648g	41.8406g	74.7		
39	K2409966-002	D3-90-42-45	SEDIMENT	28.6725g	44.0996g	41.2444g	81.5		
40	K2409966-003	D3-30-40-45	SEDIMENT	26.0735g	45.1891g	40.5031g	75.5		
41	K2409966-004	D4-30-40-45	SEDIMENT	35.3881g	48.4513g	45.2407g	75.4		
42	K2409966-005	D2-90-42-45	SEDIMENT	33.1231g	52.4801g	45.0556g	61.6		
43	K2409966-006	D2-90-45-47	SEDIMENT	31.6330g	43.8212g	41.4309g	80.4		
44	K2409966-007	D1-30-41-45	SEDIMENT	31.3677g	47.2701g	41.3707g	62.9		
45	K2409966-008	D1-30A-41-45	SEDIMENT	30.8121g	48.9946g	42.0582g	61.9		
46	K2409966-009	D1-90-44-50	SEDIMENT	30.8253g	52.2573g	43.3077g	58.2		
47	K2409966-010	D1-90-50-53	SEDIMENT	30.8464g	48.9058g	42.1906g	62.8		
48	K2409966-011	D4-90-42-45	SEDIMENT	29.0852g	45.4882g	41.2777g	74.3		
49	K2409966-012	D4-90-45-49	SEDIMENT	31.9180g	49.0886g	44.6696g	74.3		
50	K2409966-013	G-40-42	SEDIMENT	30.3365g	55.6996g	48.6346g	72.1		
51	K2409966-014	G1-42-44	SEDIMENT	32.0595g	49.3342g	43.6207g	66.9		
52	K2409966-015	G2-38-40	SEDIMENT	28.4251g	48.3375g	44.2794g	79.6		
53	K2409966-016	D2-30-G	SEDIMENT	30.2168g	53.3942g	44.2674g	60.6		
54	K2409966-017	D2-90-G	SEDIMENT	29.1479g	45.0658g	38.4012g	58.1		
55	K2409966-018	D4-30-G	SEDIMENT	30.3208g	58.1879g	48.1698g	64.1		
56	K2409966-019	G2-30-G	SEDIMENT	29.1782g	56.9052g	48.9448g	71.3		
57	K2409966-020	G1-30-G	SEDIMENT	30.9928g	55.5922g	46.1492g	61.6		

Group ID:	KWG0420029				
Analyst:	RMcKee			**Reviewed By:**	MCI PH
Date Acquired:	12/17/2004 16:45	**Oven TempStart:**	103 DEG C	**Date Reviewed:**	12/20/04
Date Completed:	12/20/2004 09:48	**Oven TempEnd:**	105 DEG C		

#	Lab Code	Client ID	Matrix	Tare	Tare+Wet	Tare+Dry	% Solids	QC Ref Sample	Comments
58	K2409966-021	D4-90-G	SEDIMENT	56.0032g	82.2566g	73.3806g	66.2		
59	K2409966-022	D1-90-G	SEDIMENT	30.9679g	49.4112g	40.5302g	51.8		
60	K2409966-023	D1-90A-G	SEDIMENT	29.9268g	47.8672g	39.2344g	51.9		
61	K2409966-024	D1-30-G	SEDIMENT	28.5892g	49.4703g	39.5310g	52.4		
62	K2409966-025	D3-90-G	SEDIMENT	30.8000g	54.3695g	46.5980g	67.0		
63	K2409966-026	D3-30-G	SEDIMENT	31.5146g	55.4600g	48.1398g	69.4		
64	K2409969-001	43333-B18-15	SOIL	1.24g	9.01g	7.68g	82.9		
65	K2409969-002	43333-B18-25	SOIL	1.23g	13.16g	11.77g	88.3		
66	K2409969-003	43333-B18-26.5	SOIL	1.22g	10.28g	9.67g	93.3		
67	K2409969-004	43333-B18-30	SOIL	1.23g	14.96g	12.17g	79.7		
68	K2409969-005	43333-B18-35	SOIL	1.23g	14.08g	11.55g	80.3		
69	K2409969-006	43333-B19-20	SOIL	1.24g	14.17g	11.50g	79.4		
70	K2409969-007	43333-B19-25	SOIL	1.22g	11.41g	9.70g	83.2		
71	K2409969-008	43333-B19-26.5	SOIL	1.24g	11.33g	9.68g	83.6		
72	K2409969-009	43333-B19-30	SOIL	1.23g	12.04g	9.99g	81.0		
73	K2409969-010	43333-B19-35	SOIL	1.23g	9.36g	7.70g	79.6		
74	KWG0420029-1	Duplicate Client Sample	MISC	1.24g	2.20g	2.1749g	97.4	K2409508-001	
75	KWG0420029-10	Triplicate Client Sample	SEDIMENT	32.3265g	51.2159g	46.3934g	74.5	K2409966-001	
76	KWG0420029-11	Duplicate Client Sample	SEDIMENT	29.1671g	46.2394g	39.8777g	62.7	K2409966-010	
77	KWG0420029-12	Triplicate Client Sample	SEDIMENT	31.4927g	52.5085g	44.6800g	62.7	K2409966-010	
78	KWG0420029-13	Duplicate Client Sample	SEDIMENT	56.3876g	82.8878g	73.9233g	66.2	K2409966-021	
79	KWG0420029-14	Triplicate Client Sample	SEDIMENT	54.9780g	80.0944g	71.5142g	65.8	K2409966-021	
80	KWG0420029-15	Duplicate Client Sample	SEDIMENT	1.2314g	27.9374g	3.5449g	8.66	K2409922-003	
81	KWG0420029-16	Duplicate Client Sample	SEDIMENT	1.2233g	5.7972g	2.0682g	18.5	K2409898-001	
82	KWG0420029-2	Duplicate Client Sample	SOIL	1.25g	12.29g	9.97g	79.0	K2409969-010	
83	KWG0420029-3	Duplicate Client Sample	SOIL	1.22g	12.31g	10.15g	80.5	K2409954-001	
84	KWG0420029-4	Duplicate Client Sample	SLUDGE	1.23g	15.22g	3.25g	14.4	K2409955-001	
85	KWG0420029-5	Duplicate Client Sample	SEDIMENT	1.23g	13.34g	5.61g	36.2	K2409933-004	
86	KWG0420029-6	Duplicate Client Sample	SEDIMENT	1.22g	15.09g	12.13g	78.7	K2409889-001	
87	KWG0420029-7	Duplicate Client Sample	SOIL	1.23g	6.53g	5.86g	87.4	K2409950-001	
88	KWG0420029-8	Duplicate Client Sample	SOIL	1.25g	6.14g	5.55g	87.9	K2409950-011	

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Group ID:	KWG0420029				
Analyst:	RMcKee			**Reviewed By:**	[illegible]
Date Acquired:	12/17/2004 16:45	**Oven TempStart:**	103 DEG C	**Date Reviewed:**	12/20/04
Date Completed:	12/20/2004 09:48	**Oven TempEnd:**	105 DEG C		

#	Lab Code	Client ID	Matrix	Tare	Tare+Wet	Tare+Dry	% Solids	QC Ref Sample	Comments
89	KWG0420029-9	Duplicate Client Sample	SEDIMENT	35.4715g	53.1536g	48.6169g	74.3	K2409966-001	

17

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : PPB Environmental
Project Name : USACE King's Bay 2004
Project Number : NA
Sample Matrix : SEDIMENT

Service Request : K2409889
Date Collected : 12/07-09/04
Date Received : 12/15/04

Sulfide, Total

Analysis Method 9030M
Test Notes :

Units : mg/Kg (ppm)
Basis : Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
E-KB04-1	K2409889-001	1.9	0.3	1	12/16/04	ND	
E-KB04-2	K2409889-002	1.9	0.3	1	12/16/04	3.7	
E-KB04-3	K2409889-003	1.9	0.3	1	12/16/04	ND	
E-KB04-4	K2409889-004	1.9	0.3	1	12/16/04	ND	
E-KB04-5	K2409889-005	15	2.4	8	12/16/04	121	
E-KB04-5 dupe	K2409889-006	15	2.4	8	12/16/04	131	
E-KB04-6	K2409889-007	15	2.4	8	12/16/04	291	
E-KB04-7	K2409889-008	38	6.0	20	12/16/04	313	
E-KB04-8	K2409889-009	38	6.0	20	12/16/04	743	
RS-KB04	K2409889-010	15	2.4	8	12/16/04	43.3	
Method Blank	K2409889-MB	1.9	0.3	1	12/16/04	ND	

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : PPB Environmental
Project Name : USACE King's Bay 2004
Project Number : NA
Sample Matrix : SEDIMENT

Service Request : K2409889
Date Collected : 12/09/04
Date Received : 12/15/04
Date Extracted : NA
Date Analyzed : 12/16/04

Duplicate Summary
Inorganic Parameters

Sample Name : E-KB04-4
Lab Code : K2409889-004DUP
Test Notes :

Units : mg/Kg (ppm)
Basis : Dry

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfide, Total	9030M	1.9	ND	0.9	NC	NC	J

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : PPB Environmental
Project Name : USACE King's Bay 2004
Project Number : NA
Sample Matrix : SEDIMENT

Service Request : K2409889
Date Collected : 12/09/04
Date Received : 12/15/04
Date Extracted : NA
Date Analyzed : 12/16/04

Matrix Spike Summary
Inorganic Parameters

Sample Name : E-KB04-4
Lab Code : K2409889-004MS
Test Notes :

Units : mg/Kg (ppm)
Basis : Dry

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfide, Total	9030M	190	1290	ND	1230	95	60-130	

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	PPB Environmental	**Service Request :**	K2409889
Project Name :	USACE King's Bay 2004	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	NA
Sample Matrix :	SEDIMENT	**Date Extracted :**	NA
		Date Analyzed :	12/16/04

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	mg/Kg (ppm)
Lab Code :	K2409889-LCS	Basis :	Dry
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfide, Total	None	9030M	9.0	7.5	83	60-130	

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : PPB Environmental
Project Name : USACE King's Bay 2004
Project Number : NA
Sample Matrix : SEDIMENT

Service Request : K2409889
Date Collected : 12/07-09/04
Date Received : 12/15/04

Carbon, Total Organic

Analysis Method 9060M
Test Notes :

Units : Percent
Basis : Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
E-KB04-1	K2409889-001	0.05	0.02	1	01/03/05	0.03	J
E-KB04-2	K2409889-002	0.05	0.02	1	01/03/05	0.03	J
E-KB04-3	K2409889-003	0.05	0.02	1	01/03/05	0.06	
E-KB04-4	K2409889-004	0.05	0.02	1	01/03/05	0.23	
E-KB04-5	K2409889-005	0.05	0.02	1	01/03/05	1.43	
E-KB04-5 dupe	K2409889-006	0.05	0.02	1	01/03/05	1.17	
E-KB04-6	K2409889-007	0.05	0.02	1	01/03/05	3.96	
E-KB04-7	K2409889-008	0.05	0.02	1	01/03/05	2.93	
E-KB04-8	K2409889-009	0.05	0.02	1	01/03/05	2.77	
RS-KB04	K2409889-010	0.05	0.02	1	01/03/05	0.23	
Method Blank	K2409889-MB	0.05	0.02	1	01/03/05	ND	

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : PPB Environmental
Project Name : USACE King's Bay 2004
Project Number : NA
Sample Matrix : SEDIMENT

Service Request : K2409889
Date Collected : 12/07/04
Date Received : 12/15/04
Date Extracted : NA
Date Analyzed : 01/03/05

Duplicate Summary
Inorganic Parameters

Sample Name : E-KB04-1
Lab Code : K2409889-001DUP
Test Notes :

Units : Percent
Basis : Dry

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	9060M	0.05	0.03	ND	NC	NC	

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : PPB Environmental
Project Name : USACE King's Bay 2004
Project Number : NA
Sample Matrix : SEDIMENT

Service Request : K2409889
Date Collected : 12/07/04
Date Received : 12/15/04
Date Extracted : NA
Date Analyzed : 01/03/05

Matrix Spike Summary
Inorganic Parameters

Sample Name : E-KB04-1
Lab Code : K2409889-001MS
Test Notes :

Units : Percent
Basis : Dry

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	9060M	0.05	1.63	0.03	1.58	95	75-125	

M Modified

Report By: AYaple

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	PPB Environmental	**Service Request :**	K2409889
Project Name :	USACE King's Bay 2004	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	NA
Sample Matrix :	SEDIMENT	**Date Extracted :**	NA
		Date Analyzed :	01/03/05

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	Percent
Lab Code :	K2409889-LCS	Basis :	Dry
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	None	9060M	0.75	0.79	105	85-115	

M Modified

Report By: AYaple

Metals

METALS

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: PPB Environmental

Service Request: K2409889

Project No.:

Project Name: USACE King's Bay 2004

Sample No.	Lab Sample ID.
E-KB04-1	K2409889-001
E-KB04-1D	K2409889-001D
E-KB04-1S	K2409889-001S
E-KB04-2	K2409889-002
E-KB04-3	K2409889-003
E-KB04-4	K2409889-004
E-KB04-5	K2409889-005
E-KB04-5 dupe	K2409889-006
E-KB04-6	K2409889-007
E-KB04-7	K2409889-008
E-KB04-8	K2409889-009
RS-KB04	K2409889-010
Method Blank	K2409889-MB

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Signature: Date: 1/13/05

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/07/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-1
Lab Code: K2409889-001

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	12.1	9.7	2	12/28/04	01/10/05	107		*
Antimony	6020	0.06	0.04	5	12/28/04	01/11/05	0.04	U	
Arsenic	6020	0.60	0.06	5	12/28/04	01/11/05	2.62		
Cadmium	6020	0.060	0.008	5	12/28/04	01/11/05	0.037	B	
Chromium	6020	0.24	0.05	5	12/28/04	01/11/05	1.26		
Copper	6020	0.12	0.02	5	12/28/04	01/11/05	0.94		
Iron	6010B	4.8	0.7	2	12/28/04	01/10/05	852		*N
Lead	6020	0.06	0.02	5	12/28/04	01/11/05	0.62		
Mercury	7471A	0.015	0.006	1	12/22/04	12/27/04	0.008	B	
Nickel	6020	0.24	0.08	5	12/28/04	01/11/05	0.77		
Silver	6020	0.024	0.004	5	12/28/04	01/11/05	0.004	U	
Zinc	6020	0.6	0.2	5	12/28/04	01/11/05	1.3		

% Solids: 80.5

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/09/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-2
Lab Code: K2409889-002

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.5	8.4	2	12/28/04	01/10/05	219		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.07		
Arsenic	6020	0.53	0.05	5	12/28/04	01/11/05	1.50		
Cadmium	6020	0.053	0.007	5	12/28/04	01/11/05	0.041	B	
Chromium	6020	0.21	0.04	5	12/28/04	01/11/05	1.45		
Copper	6020	0.11	0.02	5	12/28/04	01/11/05	0.89		
Iron	6010B	4.2	0.6	2	12/28/04	01/10/05	1450		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	0.49		
Mercury	7471A	0.016	0.006	1	12/22/04	12/27/04	0.006	U	
Nickel	6020	0.21	0.07	5	12/28/04	01/11/05	0.77		
Silver	6020	0.021	0.003	5	12/28/04	01/11/05	0.004	B	
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	1.2		

% Solids: 76.7

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/09/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-3
Lab Code: K2409889-003

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.5	8.4	2	12/28/04	01/10/05	329		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.05	B	
Arsenic	6020	0.54	0.05	5	12/28/04	01/11/05	1.74		
Cadmium	6020	0.054	0.008	5	12/28/04	01/11/05	0.028	B	
Chromium	6020	0.22	0.04	5	12/28/04	01/11/05	2.31		
Copper	6020	0.11	0.02	5	12/28/04	01/11/05	0.61		
Iron	6010B	4.2	0.6	2	12/28/04	01/10/05	1080		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	0.53		
Mercury	7471A	0.018	0.007	1	12/22/04	12/27/04	0.007	U	
Nickel	6020	0.22	0.08	5	12/28/04	01/11/05	0.96		
Silver	6020	0.021	0.003	5	12/28/04	01/11/05	0.005	B	
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	1.4		

% Solids: 77.2

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/09/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-4
Lab Code: K2409889-004

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.4	8.3	2	12/28/04	01/10/05	1500		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.05	B	
Arsenic	6020	0.51	0.05	5	12/28/04	01/11/05	2.19		
Cadmium	6020	0.051	0.007	5	12/28/04	01/11/05	0.050	B	
Chromium	6020	0.20	0.04	5	12/28/04	01/11/05	3.63		
Copper	6020	0.10	0.02	5	12/28/04	01/11/05	0.81		
Iron	6010B	4.2	0.6	2	12/28/04	01/10/05	2240		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	1.28		
Mercury	7471A	0.015	0.006	1	12/22/04	12/27/04	0.006	B	
Nickel	6020	0.20	0.07	5	12/28/04	01/11/05	1.15		
Silver	6020	0.021	0.003	5	12/28/04	01/11/05	0.008	B	
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	3.5		

% Solids: 68.9

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/08/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-5
Lab Code: K2409889-005

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.0	8.0	2	12/28/04	01/10/05	4890		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.05		
Arsenic	6020	0.50	0.05	5	12/28/04	01/11/05	5.87		
Cadmium	6020	0.050	0.007	5	12/28/04	01/11/05	0.083		
Chromium	6020	0.20	0.04	5	12/28/04	01/11/05	14.1		
Copper	6020	0.10	0.02	5	12/28/04	01/11/05	2.81		
Iron	6010B	4.0	0.6	2	12/28/04	01/10/05	8750		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	6.45		
Mercury	7471A	0.020	0.008	1	12/22/04	12/27/04	0.022		
Nickel	6020	0.20	0.07	5	12/28/04	01/11/05	4.83		
Silver	6020	0.020	0.003	5	12/28/04	01/11/05	0.024		
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	15.4		

% Solids: 45.4

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/08/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-5 dupe
Lab Code: K2409889-006

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	9.3	7.4	2	12/28/04	01/10/05	7230		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.04	B	
Arsenic	6020	0.46	0.05	5	12/28/04	01/11/05	4.96		
Cadmium	6020	0.046	0.006	5	12/28/04	01/11/05	0.078		
Chromium	6020	0.19	0.04	5	12/28/04	01/11/05	13.7		
Copper	6020	0.09	0.02	5	12/28/04	01/11/05	2.58		
Iron	6010B	3.7	0.6	2	12/28/04	01/10/05	8420		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	5.55		
Mercury	7471A	0.018	0.007	1	12/22/04	12/27/04	0.019		
Nickel	6020	0.19	0.06	5	12/28/04	01/11/05	4.77		
Silver	6020	0.019	0.003	5	12/28/04	01/11/05	0.022		
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	13.8		

% Solids: 48.5

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/08/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-6
Lab Code: K2409889-007

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	13.5	10.8	2	12/28/04	01/10/05	25300		*
Antimony	6020	0.07	0.04	5	12/28/04	01/11/05	0.07		
Arsenic	6020	0.67	0.07	5	12/28/04	01/11/05	13.2		
Cadmium	6020	0.067	0.009	5	12/28/04	01/11/05	0.141		
Chromium	6020	0.27	0.05	5	12/28/04	01/11/05	35.8		
Copper	6020	0.13	0.03	5	12/28/04	01/11/05	6.91		
Iron	6010B	5.4	0.8	2	12/28/04	01/10/05	26100		*N
Lead	6020	0.07	0.03	5	12/28/04	01/11/05	16.7		
Mercury	7471A	0.020	0.008	1	12/22/04	12/27/04	0.050		
Nickel	6020	0.27	0.09	5	12/28/04	01/11/05	12.6		
Silver	6020	0.027	0.004	5	12/28/04	01/11/05	0.067		
Zinc	6020	0.7	0.3	5	12/28/04	01/11/05	35.7		

% Solids: 27.5

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/08/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-7
Lab Code: K2409889-008

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.5	8.4	2	12/28/04	01/10/05	15200		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.07		
Arsenic	6020	0.52	0.05	5	12/28/04	01/11/05	10.7		
Cadmium	6020	0.052	0.007	5	12/28/04	01/11/05	0.122		
Chromium	6020	0.21	0.04	5	12/28/04	01/11/05	25.8		
Copper	6020	0.11	0.02	5	12/28/04	01/11/05	5.15		
Iron	6010B	4.2	0.6	2	12/28/04	01/10/05	19400		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	11.9		
Mercury	7471A	0.018	0.007	1	12/22/04	12/27/04	0.039		
Nickel	6020	0.21	0.07	5	12/28/04	01/11/05	9.02		
Silver	6020	0.021	0.003	5	12/28/04	01/11/05	0.048		
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	27.0		

% Solids: 35.2

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/08/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: E-KB04-8
Lab Code: K2409889-009

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.1	8.1	2	12/28/04	01/10/05	17300		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.04	B	
Arsenic	6020	0.51	0.05	5	12/28/04	01/11/05	10.6		
Cadmium	6020	0.051	0.007	5	12/28/04	01/11/05	0.129		
Chromium	6020	0.20	0.04	5	12/28/04	01/11/05	28.6		
Copper	6020	0.10	0.02	5	12/28/04	01/11/05	5.61		
Iron	6010B	4.0	0.6	2	12/28/04	01/10/05	19800		*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	13.8		
Mercury	7471A	0.019	0.008	1	12/22/04	12/27/04	0.039		
Nickel	6020	0.20	0.07	5	12/28/04	01/11/05	9.85		
Silver	6020	0.020	0.003	5	12/28/04	01/11/05	0.050		
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	29.7		

% Solids: 36.4

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: 12/08/04
Date Received: 12/15/04
Units: mg/kg
Basis: Dry

Sample Name: RS-KB04
Lab Code: K2409889-010

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	11.0	8.8	2	12/28/04	01/10/05	1820		*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.07		
Arsenic	6020	0.55	0.06	5	12/28/04	01/11/05	1.58		
Cadmium	6020	0.055	0.008	5	12/28/04	01/11/05	0.101		
Chromium	6020	0.22	0.04	5	12/28/04	01/11/05	5.27		
Copper	6020	0.11	0.02	5	12/28/04	01/11/05	1.14		
Iron	6010B	4.4	0.7	2	12/28/04	01/10/05	2100		*N
Lead	6020	0.06	0.02	5	12/28/04	01/11/05	1.26		
Mercury	7471A	0.017	0.007	1	12/22/04	12/27/04	0.008	B	
Nickel	6020	0.22	0.08	5	12/28/04	01/11/05	1.73		
Silver	6020	0.022	0.003	5	12/28/04	01/11/05	0.013	B	
Zinc	6020	0.6	0.2	5	12/28/04	01/11/05	4.0		

% Solids: 74.1

Comments:

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Date Collected: NA
Date Received: NA
Units: mg/kg
Basis: Dry

Sample Name: Method Blank
Lab Code: K2409889-MB

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	10.0	8.0	2	12/28/04	01/10/05	8.0	U	*
Antimony	6020	0.05	0.03	5	12/28/04	01/11/05	0.03	U	
Arsenic	6020	0.50	0.05	5	12/28/04	01/11/05	0.05	U	
Cadmium	6020	0.050	0.007	5	12/28/04	01/11/05	0.007	U	
Chromium	6020	0.20	0.04	5	12/28/04	01/11/05	0.11	B	
Copper	6020	0.10	0.02	5	12/28/04	01/11/05	0.02	U	
Iron	6010B	4.0	0.6	2	12/28/04	01/10/05	1.1	B	*N
Lead	6020	0.05	0.02	5	12/28/04	01/11/05	0.02	U	
Mercury	7471A	0.020	0.008	1	12/22/04	12/27/04	0.008	U	
Nickel	6020	0.20	0.07	5	12/28/04	01/11/05	0.11	B	
Silver	6020	0.020	0.003	5	12/28/04	01/11/05	0.003	U	
Zinc	6020	0.5	0.2	5	12/28/04	01/11/05	0.2	U	

% Solids: 100.0

Comments:

METALS
- 5a -
SPIKE SAMPLE RECOVERY

Client: PPB Environmental
Project No.:
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Units: mg/kg
Basis: Dry
% Solids: 80.5

Sample Name: E-KB04-1S
Lab Code: K2409889-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Aluminum	75 - 125	628		107		492	106		6010B
Antimony	70 - 130	117		0.04	U	123	95		6020
Arsenic	70 - 130	135		2.62		122	109		6020
Cadmium	70 - 130	12.9		0.037	B	12.2	105		6020
Chromium	70 - 130	54.1		1.26		48.7	109		6020
Copper	70 - 130	60.8		0.94		60.9	98		6020
Iron	75 - 125	1690		852		246	341	N	6010B
Lead	70 - 130	122		0.62		122	99		6020
Mercury	55 - 137	0.397		0.008	B	0.412	94		7471A
Nickel	70 - 130	128		0.77		122	104		6020
Silver	70 - 130	11.3		0.004	U	12.3	92		6020
Zinc	70 - 130	123		1.3		122	100		6020

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
- 5b -
POST DIGEST SPIKE SAMPLE RECOVERY

Client: PPB Environmental

Service Request: K2409889

Project No.:

Units: ug/L

Project Name: USACE King's Bay 2004

Matrix: SEDIMENT

Sample Name: E-KB04-1A

Lab Code: K2409889-001A

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony	75-125	10.6		0.06	U	10.0	106		MS
Arsenic	75-125	26.0		4.34		20.0	108		MS
Cadmium	75-125	19.2		0.061	B	20.0	96		MS
Chromium	75-125	23.7		2.09		20.0	108		MS
Copper	75-125	20.2		1.55		20.0	93		MS
Lead	75-125	19.8		1.03		20.0	94		MS
Nickel	75-125	21.3		1.27		20.0	100		MS
Silver	75-125	9.73		0.006	U	10.0	97		MS
Zinc	75-125	19.5		2.20		20.0	86		MS

Comments:

METALS
- 6 -
DUPLICATES

Client: PPB Environmental
Project No.:
Project Name: USACE King's Bay 2004
Matrix: SEDIMENT

Service Request: K2409889
Units: mg/kg
Basis: Dry
% Solids: 80.5

Sample Name:E-KB04-1D
Lab Code: K2409889-001D

Analyte	Control Limit(%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	30	107		167		44	*	6010B
Antimony		0.04	U	0.04	B	200.0		6020
Arsenic		2.62		2.18		18		6020
Cadmium		0.037	B	0.033	B	12		6020
Chromium	30	1.26		1.04		19		6020
Copper	30	0.94		1.07		13		6020
Iron	30	852		1320		43	*	6010B
Lead	30	0.62		0.55		13		6020
Mercury		0.008	B	0.007	U	200.0		7471A
Nickel		0.77		0.78		2		6020
Silver		0.004	U	0.004	U			6020
Zinc		1.3		1.0		25		6020

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
-7-
LABORATORY CONTROL SAMPLE

Client: PPB Environmental

Service Request: K2409889

Project No.:

Project Name: USACE King's Bay 2004

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source: ERA Lot #246

Analyte	Aqueous mg/L True	Aqueous mg/L Found	Aqueous mg/L %R	Solid (mg/kg) True	Solid (mg/kg) Found	C	Limits		%R
Aluminum				8270	7770		4200	12300	94
Antimony				32.6	35.8		0.0500	68.1	110
Arsenic				187	185		139	235	99
Cadmium				67.9	66.7		52.0	83.6	98
Chromium				144	153		115	173	106
Copper				91.3	88.0		74.8	108	96
Iron				12700	14400		7470	17900	113
Lead				125	128		95.2	155	102
Mercury				1.49	1.38		0.852	2.12	93
Nickel				78.0	76.3		61.1	94.9	98
Silver				90.0	94.1		67.0	113	105
Zinc				283	261		219	347	92

METALS
- 9 -
ICP SERIAL DILUTIONS

Client: PPB Environmental

Project No.:

Project Name: USACE King's Bay 2004

Service Request: K2409889

Units: ug/L

Sample Name: E-KB04-1L

Lab Code: K2409889-001L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-	Q	Method
Antimony	0.06	U	0.30	U			6020
Arsenic	4.34		4.57	B	5		6020
Cadmium	0.061	B	0.125	B	103		6020
Chromium	2.09		2.31		11		6020
Copper	1.55		1.76		14		6020
Lead	1.03		1.11		8		6020
Nickel	1.27		2.03		60		6020
Silver	0.006	U	0.030	U			6020
Zinc	2.20		3.29	B	50		6020

METALS
- 9 -
ICP SERIAL DILUTIONS

Client: PPB Environmental

Service Request: K2409889

Project No.:

Units: ug/L

Project Name: USACE King's Bay 2004

Sample Name: E-KB04-5L

Lab Code: K2409889-005L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-	Q	Method
Aluminum	24600		24200		2		6010B
Iron	43200		44400		3		6010B

Butyltins

Organic Analysis:
Butyltins (as cation)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: USACE King's Bay 2004

Service Request: K2409889

Cover Page - Organic Analysis Data Package
Butyltins (as cation)

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1	K2409889-001	12/07/2004	12/15/2004
E-KB04-2	K2409889-002	12/09/2004	12/15/2004
E-KB04-3	K2409889-003	12/09/2004	12/15/2004
E-KB04-4	K2409889-004	12/09/2004	12/15/2004
E-KB04-5	K2409889-005	12/08/2004	12/15/2004
E-KB04-5 dupe	K2409889-006	12/08/2004	12/15/2004
E-KB04-6	K2409889-007	12/08/2004	12/15/2004
E-KB04-7	K2409889-008	12/08/2004	12/15/2004
E-KB04-8	K2409889-009	12/08/2004	12/15/2004
RS-KB04	K2409889-010	12/08/2004	12/15/2004
E-KB04-4MS	KWG0420088-1	12/09/2004	12/15/2004
E-KB04-4DMS	KWG0420088-2	12/09/2004	12/15/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: 1/24/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/07/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Butyltins (as cation)

Sample Name:	E-KB04-1	**Units:**	ug/Kg
Lab Code:	K2409889-001	**Basis:**	Dry
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	1.3	0.15	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	1.3	0.20	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	1.3	0.051	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	1.3	0.089	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	54	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/09/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Butyltins (as cation)

Sample Name:	E-KB04-2	**Units:**	ug/Kg
Lab Code:	K2409889-002	**Basis:**	Dry
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	1.3	0.16	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	1.3	0.21	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	1.3	0.054	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	1.3	0.093	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	83	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Butyltins (as cation)

Sample Name: E-KB04-3
Lab Code: K2409889-003

Units: ug/Kg
Basis: Dry

Extraction Method: METHOD
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	1.3	0.16	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	1.3	0.21	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	1.3	0.054	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	1.3	0.092	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	52	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/09/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Butyltins (as cation)

Sample Name:	E-KB04-4	**Units:**	ug/Kg
Lab Code:	K2409889-004	**Basis:**	Dry
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	1.5	0.18	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	1.5	0.24	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	1.5	0.060	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	1.5	0.11	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	85	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/08/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Butyltins (as cation)

Sample Name:	E-KB04-5	**Units:**	ug/Kg
Lab Code:	K2409889-005	**Basis:**	Dry
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	2.2	0.27	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	2.2	0.36	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	**0.18**	J	2.2	0.091	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	2.2	0.16	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	88	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Butyltins (as cation)

Sample Name: E-KB04-5 dupe
Lab Code: K2409889-006

Units: ug/Kg
Basis: Dry

Extraction Method: METHOD
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	2.1	0.25	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	2.1	0.33	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	2.1	0.085	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	2.1	0.15	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	86	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Butyltins (as cation)

Sample Name: E-KB04-6
Lab Code: K2409889-007

Units: ug/Kg
Basis: Dry

Extraction Method: METHOD
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	3.7	0.44	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	3.7	0.59	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	**0.49**	J	3.7	0.15	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	**0.48**	J	3.7	0.26	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	78	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Butyltins (as cation)

Sample Name: E-KB04-7
Lab Code: K2409889-008

Units: ug/Kg
Basis: Dry

Extraction Method: METHOD
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	2.9	0.35	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	2.9	0.46	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	**0.21**	J	2.9	0.12	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	2.9	0.21	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	68	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Butyltins (as cation)

Sample Name: E-KB04-8
Lab Code: K2409889-009

Units: ug/Kg
Basis: Dry

Extraction Method: METHOD
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	2.8	0.33	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	2.8	0.44	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	**0.52**	J	2.8	0.12	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	2.8	0.20	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	87	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Butyltins (as cation)

Sample Name: RS-KB04
Lab Code: K2409889-010

Units: ug/Kg
Basis: Dry

Extraction Method: METHOD
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	1.4	0.17	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	1.4	0.22	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	1.4	0.056	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	1.4	0.096	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	86	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Butyltins (as cation)

Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KWG0420088-4	**Basis:**	Dry
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	1.0	0.12	1	12/20/04	12/29/04	KWG0420088	
Tri-n-butyltin	ND	U	1.0	0.16	1	12/20/04	12/29/04	KWG0420088	
Di-n-butyltin	ND	U	1.0	0.041	1	12/20/04	12/29/04	KWG0420088	
n-Butyltin	ND	U	1.0	0.071	1	12/20/04	12/29/04	KWG0420088	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	56	10-132	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889

Surrogate Recovery Summary
Butyltins (as cation)

Extraction Method: METHOD
Analysis Method: Krone

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1
E-KB04-1	K2409889-001	54
E-KB04-2	K2409889-002	83
E-KB04-3	K2409889-003	52
E-KB04-4	K2409889-004	85
E-KB04-5	K2409889-005	88
E-KB04-5 dupe	K2409889-006	86
E-KB04-6	K2409889-007	78
E-KB04-7	K2409889-008	68
E-KB04-8	K2409889-009	87
RS-KB04	K2409889-010	86
Method Blank	KWG0420088-4	56
E-KB04-4MS	KWG0420088-1	29
E-KB04-4DMS	KWG0420088-2	86
Lab Control Sample	KWG0420088-3	68

Surrogate Recovery Control Limits (%)

Sur1 = Tri-n-propyltin 10-132

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Extracted:**	12/20/2004
Sample Matrix:	Sediment	**Date Analyzed:**	12/29/2004

Matrix Spike/Duplicate Matrix Spike Summary
Butyltins (as cation)

Sample Name:	E-KB04-4	**Units:**	ug/Kg
Lab Code:	K2409889-004	**Basis:**	Dry
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone	**Extraction Lot:**	KWG0420088

		E-KB04-4MS KWG0420088-1 Matrix Spike			E-KB04-4DMS KWG0420088-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Tetra-n-butyltin	ND	11.1	35.9	31	29.4	36.2	81	10-153	91 *	50
Tri-n-butyltin	ND	11.1	31.9	35	25.5	32.1	79	10-152	79 *	50
Di-n-butyltin	ND	10.9	27.6	39	22.8	27.8	82	10-153	71 *	50
n-Butyltin	ND	1.17	22.4	5 *	3.12	22.6	14	10-99	91 *	50

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/20/2004
Date Analyzed: 12/29/2004

Lab Control Spike Summary
Butyltins (as cation)

Extraction Method: METHOD
Analysis Method: Krone

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0420088

	Lab Control Sample KWG0420088-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Tetra-n-butyltin	20.1	25.0	80	10-128
Tri-n-butyltin	19.0	22.2	86	10-144
Di-n-butyltin	19.1	19.2	100	10-150
n-Butyltin	6.30	15.6	40	10-137

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Extracted:**	12/20/2004
Sample Matrix:	Sediment	**Date Analyzed:**	12/29/2004
		Time Analyzed:	17:36

Method Blank Summary
Butyltins (as cation)

Sample Name:	Method Blank	**File ID:**	J:\GC26\DATA\122904\1229F004.D
Lab Code:	KWG0420088-4	**Instrument ID:**	GC26
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone	**Extraction Lot:**	KWG0420088

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0420088-3	J:\GC26\DATA\122904\1229F005.D	12/29/04	17:52
E-KB04-1	K2409889-001	J:\GC26\DATA\122904\1229F006.D	12/29/04	18:08
E-KB04-2	K2409889-002	J:\GC26\DATA\122904\1229F007.D	12/29/04	18:24
E-KB04-3	K2409889-003	J:\GC26\DATA\122904\1229F008.D	12/29/04	18:40
E-KB04-4	K2409889-004	J:\GC26\DATA\122904\1229F009.D	12/29/04	18:56
E-KB04-4MS	KWG0420088-1	J:\GC26\DATA\122904\1229F010.D	12/29/04	19:12
E-KB04-4DMS	KWG0420088-2	J:\GC26\DATA\122904\1229F011.D	12/29/04	19:28
E-KB04-5	K2409889-005	J:\GC26\DATA\122904\1229F012.D	12/29/04	19:44
E-KB04-5 dupe	K2409889-006	J:\GC26\DATA\122904\1229F013.D	12/29/04	20:00
E-KB04-6	K2409889-007	J:\GC26\DATA\122904\1229F014.D	12/29/04	20:16
E-KB04-7	K2409889-008	J:\GC26\DATA\122904\1229F015.D	12/29/04	20:32
E-KB04-8	K2409889-009	J:\GC26\DATA\122904\1229F019.D	12/29/04	21:36
RS-KB04	K2409889-010	J:\GC26\DATA\122904\1229F020.D	12/29/04	21:52

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Extracted:**	12/20/2004
Sample Matrix:	Sediment	**Date Analyzed:**	12/29/2004
		Time Analyzed:	17:52

Lab Control Sample Summary
Butyltins (as cation)

Sample Name:	Lab Control Sample	**File ID:**	J:\GC26\DATA\122904\1229F005.D
Lab Code:	KWG0420088-3	**Instrument ID:**	GC26
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	Krone	**Extraction Lot:**	KWG0420088

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0420088-4	J:\GC26\DATA\122904\1229F004.D	12/29/04	17:36
E-KB04-1	K2409889-001	J:\GC26\DATA\122904\1229F006.D	12/29/04	18:08
E-KB04-2	K2409889-002	J:\GC26\DATA\122904\1229F007.D	12/29/04	18:24
E-KB04-3	K2409889-003	J:\GC26\DATA\122904\1229F008.D	12/29/04	18:40
E-KB04-4	K2409889-004	J:\GC26\DATA\122904\1229F009.D	12/29/04	18:56
E-KB04-4MS	KWG0420088-1	J:\GC26\DATA\122904\1229F010.D	12/29/04	19:12
E-KB04-4DMS	KWG0420088-2	J:\GC26\DATA\122904\1229F011.D	12/29/04	19:28
E-KB04-5	K2409889-005	J:\GC26\DATA\122904\1229F012.D	12/29/04	19:44
E-KB04-5 dupe	K2409889-006	J:\GC26\DATA\122904\1229F013.D	12/29/04	20:00
E-KB04-6	K2409889-007	J:\GC26\DATA\122904\1229F014.D	12/29/04	20:16
E-KB04-7	K2409889-008	J:\GC26\DATA\122904\1229F015.D	12/29/04	20:32
E-KB04-8	K2409889-009	J:\GC26\DATA\122904\1229F019.D	12/29/04	21:36
RS-KB04	K2409889-010	J:\GC26\DATA\122904\1229F020.D	12/29/04	21:52

Organochlorine Pesticides
EPA Method 8081

Organic Analysis:
Organochlorine Pesticides

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Cover Page - Organic Analysis Data Package
Organochlorine Pesticides

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1-Elutriate	K2409983-001	12/15/2004	12/17/2004
E-KB04-2-Elutriate	K2409983-002	12/15/2004	12/17/2004
E-KB04-3-Elutriate	K2409983-003	12/15/2004	12/17/2004
E-KB04-4-Elutriate	K2409983-004	12/15/2004	12/17/2004
E-KB04-5-Elutriate	K2409983-005	12/15/2004	12/17/2004
E-KB04-5-Dupe-Elutriate	K2409983-006	12/15/2004	12/17/2004
E-KB04-6-Elutriate	K2409983-007	12/16/2004	12/17/2004
E-KB04-7-Elutriate	K2409983-008	12/16/2004	12/17/2004
E-KB04-8-Elutriate	K2409983-009	12/16/2004	12/17/2004
RS-KB04-Elutriate	K2409983-010	12/16/2004	12/17/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Todd Poyhari

Date: 2/3/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Organochlorine Pesticides

Sample Name:	E-KB04-1-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0050	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0050	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0050	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0050	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0050	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0050	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0050	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0050	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0050	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0050	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	Ui	0.0050	0.0036	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0050	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0050	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.25	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.10	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	65	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Organochlorine Pesticides

Sample Name:	E-KB04-2-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-002	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0050	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0050	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	Ui	0.0050	0.0025	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0050	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	**0.0047**	JP	0.0050	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	Ui	0.0050	0.00075	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	Ui	0.0050	0.00068	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	Ui	0.0050	0.0013	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0050	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0050	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0050	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0050	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.25	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.10	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	86	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Organochlorine Pesticides

Sample Name:	E-KB04-3-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-003	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0050	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	Ui	0.0050	0.0050	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0050	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	Ui	0.0060	0.0060	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0050	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0050	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	Ui	0.0050	0.00068	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0050	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0050	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0050	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	Ui	0.0052	0.0052	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	**0.0036**	J	0.0050	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.25	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.10	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	17	23-119	01/22/05	Outside Control Limits

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Organochlorine Pesticides

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0051	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0051	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	Ui	0.0051	0.0029	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	**0.0047**	J	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	72	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Organochlorine Pesticides

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0051	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	Ui	0.0051	0.0023	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0051	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	74	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Organochlorine Pesticides

Sample Name:	E-KB04-5-Dupe-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-006	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0051	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0051	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0051	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	77	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Organochlorine Pesticides

Sample Name: E-KB04-6-Elutriate
Lab Code: K2409983-007

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0051	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0051	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0051	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	69	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Organochlorine Pesticides

Sample Name: E-KB04-7-Elutriate
Lab Code: K2409983-008

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0051	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0051	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	Ui	0.0051	0.00096	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	61	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Organochlorine Pesticides

Sample Name: E-KB04-8-Elutriate
Lab Code: K2409983-009

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0051	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	Ui	0.0051	0.0051	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0051	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	75	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Organochlorine Pesticides

Sample Name: RS-KB04-Elutriate
Lab Code: K2409983-010

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0051	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	Ui	0.0051	0.0051	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0051	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	Ui	0.0051	0.0042	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0051	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0051	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0051	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0051	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	Ui	0.0051	0.00071	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0051	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0051	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0051	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0051	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	ND	U	0.0051	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0051	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.26	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.11	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	93	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: NA
Date Received: NA

Organochlorine Pesticides

Sample Name: Method Blank
Lab Code: KWG0420354-5

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0050	0.0049	1	12/22/04	01/22/05	KWG0420354	
beta-BHC	ND	U	0.0050	0.0017	1	12/22/04	01/22/05	KWG0420354	
gamma-BHC (Lindane)	ND	U	0.0050	0.0022	1	12/22/04	01/22/05	KWG0420354	
delta-BHC	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Heptachlor	ND	U	0.0050	0.0039	1	12/22/04	01/22/05	KWG0420354	
Aldrin	ND	U	0.0050	0.0018	1	12/22/04	01/22/05	KWG0420354	
Heptachlor Epoxide	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan I	ND	U	0.0050	0.00066	1	12/22/04	01/22/05	KWG0420354	
Dieldrin	ND	U	0.0050	0.00067	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDE	ND	U	0.0050	0.00069	1	12/22/04	01/22/05	KWG0420354	
Endrin	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Endosulfan II	ND	U	0.0050	0.0019	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDD	ND	U	0.0050	0.00082	1	12/22/04	01/22/05	KWG0420354	
Endrin Aldehyde	ND	U	0.0050	0.0012	1	12/22/04	01/22/05	KWG0420354	
Endosulfan Sulfate	ND	U	0.0050	0.0014	1	12/22/04	01/22/05	KWG0420354	
4,4'-DDT	**0.0022**	J	0.0050	0.0020	1	12/22/04	01/22/05	KWG0420354	
Methoxychlor	ND	U	0.0050	0.0015	1	12/22/04	01/22/05	KWG0420354	
Toxaphene	ND	U	0.25	0.16	1	12/22/04	01/22/05	KWG0420354	
Chlordane	ND	U	0.10	0.054	1	12/22/04	01/22/05	KWG0420354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	64	23-119	01/22/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Extracted: 12/22/2004
Date Analyzed: 01/31/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Organochlorine Pesticides

Extraction Method: EPA 3520C
Analysis Method: 8081A

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0420354

	Lab Control Sample KWG0420354-1 Lab Control Spike			Duplicate Lab Control Sample KWG0420354-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.203	0.200	101	0.222	0.200	111	48-137	9	30
beta-BHC	0.207	0.200	103	0.214	0.200	107	45-138	4	30
gamma-BHC (Lindane)	0.198	0.200	99	0.215	0.200	107	47-135	8	30
delta-BHC	0.207	0.200	104	0.223	0.200	111	68-125	7	30
Heptachlor	0.189	0.200	95	0.199	0.200	100	40-126	5	30
Aldrin	0.187	0.200	93	0.193	0.200	97	31-129	3	30
Heptachlor Epoxide	0.194	0.200	97	0.203	0.200	101	41-134	4	30
Endosulfan I	0.127	0.200	63	0.133	0.200	67	28-121	5	30
Dieldrin	0.195	0.200	98	0.205	0.200	102	45-136	5	30
4,4'-DDE	0.197	0.200	99	0.206	0.200	103	61-117	4	30
Endrin	0.190	0.200	95	0.210	0.200	105	46-141	10	30
Endosulfan II	0.143	0.200	71	0.151	0.200	76	35-125	6	30
4,4'-DDD	0.182	0.200	91	0.210	0.200	105	59-126	14	30
Endrin Aldehyde	0.173	0.200	86	0.184	0.200	92	37-120	6	30
Endosulfan Sulfate	0.192	0.200	96	0.201	0.200	101	44-134	5	30
4,4'-DDT	0.214	0.200	107	0.229	0.200	115	56-130	7	30
Methoxychlor	0.221	0.200	111	0.229	0.200	114	47-139	3	30
Toxaphene	2.46	2.50	98	2.60	2.50	104	42-177	6	30
Chlordane	2.23	2.00	112	2.36	2.00	118	34-140	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Polychlorinated Biphenyls
PCB's
EPA Method 8082

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Cover Page - Organic Analysis Data Package
Polychlorinated Biphenyls (PCBs)

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1-Elutriate	K2409983-001	12/15/2004	12/17/2004
E-KB04-2-Elutriate	K2409983-002	12/15/2004	12/17/2004
E-KB04-3-Elutriate	K2409983-003	12/15/2004	12/17/2004
E-KB04-4-Elutriate	K2409983-004	12/15/2004	12/17/2004
E-KB04-5-Elutriate	K2409983-005	12/15/2004	12/17/2004
E-KB04-5-Dupe-Elutriate	K2409983-006	12/15/2004	12/17/2004
E-KB04-6-Elutriate	K2409983-007	12/16/2004	12/17/2004
E-KB04-7-Elutriate	K2409983-008	12/16/2004	12/17/2004
E-KB04-8-Elutriate	K2409983-009	12/16/2004	12/17/2004
RS-KB04-Elutriate	K2409983-010	12/16/2004	12/17/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Todd Rybrain

Date: 1/25/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name:	E-KB04-1-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-001	**Basis:**	NA
Extraction Method:	EPA 3535	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.23	0.025	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.45	0.044	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.23	0.062	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.23	0.094	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.23	0.025	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.23	0.038	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.23	0.016	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	96	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-2-Elutriate
Lab Code: K2409983-002

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.42	0.041	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.21	0.058	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.21	0.088	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.21	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.21	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-3-Elutriate
Lab Code: K2409983-003

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.42	0.041	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.21	0.057	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.21	0.087	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.21	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.21	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	95	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.22	0.024	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.43	0.042	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.22	0.058	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.22	0.089	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.22	0.024	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.22	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.22	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	72	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.42	0.041	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.21	0.057	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.21	0.087	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.21	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.21	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	58	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name:	E-KB04-5-Dupe-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-006	**Basis:**	NA
Extraction Method:	EPA 3535	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.42	0.041	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.21	0.058	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.21	0.088	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.21	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.21	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	68	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name:	E-KB04-6-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-007	**Basis:**	NA
Extraction Method:	EPA 3535	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.42	0.041	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.21	0.058	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.21	0.088	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.21	0.023	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.21	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.21	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	74	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name:	E-KB04-7-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-008	**Basis:**	NA
Extraction Method:	EPA 3535	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.22	0.024	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.43	0.042	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.22	0.058	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.22	0.089	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.22	0.024	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.22	0.036	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.22	0.015	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	71	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-8-Elutriate
Lab Code: K2409983-009

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.21	0.023	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1221	ND	U	0.42	0.041	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1232	ND	U	0.21	0.057	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1242	ND	U	0.21	0.087	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1248	ND	U	0.21	0.023	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1254	ND	U	0.21	0.036	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1260	ND	U	0.21	0.015	1	12/20/04	12/31/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	66	10-147	12/31/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Polychlorinated Biphenyls (PCBs)

Sample Name:	RS-KB04-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-010	**Basis:**	NA
Extraction Method:	EPA 3535	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.22	0.024	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1221	ND	U	0.43	0.042	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1232	ND	U	0.22	0.058	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1242	ND	U	0.22	0.089	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1248	ND	U	0.22	0.024	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1254	ND	U	0.22	0.036	1	12/20/04	12/31/04	KWG0420108	
Aroclor 1260	ND	U	0.22	0.015	1	12/20/04	12/31/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	10-147	12/31/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0420108-3

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	0.022	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1221	ND	U	0.39	0.039	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1232	ND	U	0.20	0.055	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1242	ND	U	0.20	0.084	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1248	ND	U	0.20	0.022	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1254	ND	U	0.20	0.034	1	12/20/04	12/30/04	KWG0420108	
Aroclor 1260	ND	U	0.20	0.014	1	12/20/04	12/30/04	KWG0420108	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	94	10-147	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Extracted:**	12/20/2004
Sample Matrix:	Water	**Date Analyzed:**	12/30/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method:	EPA 3535	**Units:**	ug/L
Analysis Method:	8082	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0420108

	Lab Control Sample KWG0420108-1 Lab Control Spike			Duplicate Lab Control Sample KWG0420108-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	1.85	2.00	93	1.98	2.00	99	56-116	7	30
Aroclor 1260	1.80	2.00	90	1.93	2.00	97	57-128	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 ph (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

February 3, 2005 Service Request No: K2409983

Bryan Cotter
PPB Environmental Laboratories, Inc.
6821 SW Archer Road
Gainesville, FL 32608

RE: PPB-USACE King's Bay 2004

Dear Bryan:

Enclosed are the results of the sample(s) submitted to our laboratory on December 17, 2004. For your reference, these analyses have been assigned our service request number K2409983.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jacky
Project Chemist

HJ/jeb

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	PPB Environmental	**Service Request No.:**	K2409983
Project:	PPB - USACE King's Bay 2004	**Date Received:**	12/17/04
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Ten water samples were received for analysis at Columbia Analytical Services on 12/17/04. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Notes of Discussion
Insufficient sample was available to prepare matrix spike and duplicate samples for the reductive precipitation procedure. The Laboratory Control Sample (LCS) was prepared and analyzed in duplicate.

Organotin Compounds

No anomalies associated with the analysis of these samples were observed.

Oil and Grease by EPA Method 1664

No anomalies associated with the analysis of these samples were observed.

Organochlorine Pesticides by EPA Method 8081A

Sample Confirmation Notes:
The confirmation comparison criteria are not applicable because at least one of the values is below the Method Reporting Limit (MRL).

Elevated Method Reporting Limits:
The reporting limit is elevated for several analytes in most samples. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the reporting limit. The results are flagged to indicate the matrix interference.

Surrogate Exceptions:
The control criteria were exceeded for the Tetrachloro-m-xylene surrogate in sample E-KB04-3-Elutriate. A reanalysis was not performed because sample was too far past the recommended holding time. No further corrective action was possible.

Approved by HC **Date** 2/8/05

PCB Aroclors by EPA Method 8082

No anomalies associated with the analysis of these samples were observed.

PCB Congeners by EPA Method 8082

Continuing Calibration Verification (CCV) Exceptions:
The primary evaluation criterion was exceeded for the following analytes in (CCVs) 0105F002, 0105F015, and 0105F023: PCB 206, PCB 209. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the average percent recovery of all analytes in the verification standard. The standard meets the alternative evaluation criteria.

Surrogate Exceptions:
The upper control criterion was exceeded for the Tetrachloro-m-xylene surrogate in the Duplicate Laboratory Control Sample (DLCS) KWG0420288-2:. The percent recovery of TCMX was similar to the recoveries of the other analytes in the DLCS. Please see the section Lab Control Sample Exceptions for further information.

Laboratory Control Sample (LCS) Exceptions:
The upper control criterion was exceeded for the following analytes in LCS KWG0420288-1: PCB 8, PCB 28, PCB 156, and PCB 180. The analytes in question were not detected in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

The upper control criterion was exceeded for all analytes in Duplicate LCS KWG0420288-2. The analytes in question were not detected in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

The Relative Percent Differences (RPDs) for all analytes in the replicate LCS analyses (KWG0420288-1 and KWG0420288-2) were outside control criteria. Reanalysis of the associated field samples could not be performed because insufficient sample remained for additional testing. The data is flagged to indicate the problem. Although there were a few high recoveries in the LCS, every analyte recovery was very high in the DLCS. Examination of the internal standard values indicates that the DLCS contained levels of internal standard at approximately half the normal amount. This would bias the analyte recoveries high. An incorrect amount of internal standard was probably added to the DLCS prior to analysis. This would account for the high DLCS recoveries and the high RPD values as well.

Elevated Method Reporting Limits:
The reporting limit is elevated for PCB 8 in sample E-KB04-8-Elutriate. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the reporting limit. The result is flagged to indicate the matrix interference.

The detection limit is elevated for PCB 8 in sample RS-KB04-Elutriate, PCB 52 in sample E-KB04-3-Elutriate. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the detection limit. The result is flagged to indicate the matrix interference.

Calibration Range Exceedence:
The calibration range was exceeded for several analytes in Duplicate Laboratory Control Sample (DLCS) KWG0420288-2. The high recoveries are probably related to an incorrect amount of internal standard being added to this extract. Please see the section Lab Control Sample Exceptions for further information.

Approved by HC **Date** 2/8/05

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

Initial Calibration (ICAL) Exceptions:
The primary evaluation criterion was exceeded for the following analytes in ICAL ID CAL4064: 2,6-Dimethylnaphthalene, Fluorene-d10, 2,4,6-Tribromophenol, Fluoranthene-d10, Dibenz(a,h)anthracene. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the mean Relative Standard Deviation (RSD) of all analytes in the calibration. The result of the mean RSD calculation was 10.7%. The calibration meets the alternative evaluation criteria. Note that CAS/Kelso policy does not allow the use of averaging if any analyte in the ICAL exceeds 30% RSD.

Laboratory Control Sample (LCS) Exceptions:
The upper control criterion was exceeded for Naphthalene and Phenanthrene in LCS KWG0420082-1. The analytes in question were not detected above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Approved by HC **Date** 2/8/05

Chain of Custody Documentation

KB04 Elutriate Chemistry

K2409983

ppb
ENVIRONMENTAL LABORATORIES, INC.
6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor CAS-Kelso, WA
		Shipping Method FedEx P

CLIENT NAME: PPB-USACE King's Bay 2004

CLIENT PROJECT:

SITE NAME & ADDRESS:

SAMPLERS: (Signature)

LAB REPORT GOES TO (Client contact person): Bryan Cotter

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

PRESERVATION
- CF Chilled-Filtered
- SF Sulfuric-Filtered
- NF Nitric-Filtered
- C Chilled
- S Sulfuric
- N Nitric
- B Basic/NaOH
- Z Zinc
- T Thiosulfate
- H HCL
- Ot Other (see Remarks)

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Metals: Sb, As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	Pests, PCB Aroclors, PCB Cong, PAHs, O&G (Total organic tins)						Lab I.D. Number
261732	12/15/04	1200	✓		E-KB04-1-Elutriate	elut		✓	✓	✓	✓	✓	✓		
733					-2-										
734					-3-										
735					-4-										
736					-5-										
737					-5 dupe-										
738	12/16/04	1200			-6-										
739					-7-										
740					-8-										
741					RS-KB04-Elutriate										

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
			12/15/04
Relinquished by: (Signature)	Date / Time	Received by: (Signature) CAS X	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature) [signature]	Date / Time 12/17/04 (1000)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Please use station location as client ID

See Attached SOW for analyses

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

Columbia Analytical Services Inc.
Cooler Receipt and Preservation Form

PC HIAIV

Project/Client PPB (page #1) Work Order K240 9983

Cooler received on 12/17/04 and opened on 12/17/04 by A Juell

1. Were custody seals on outside of coolers? Y (N)
   If yes, how many and where?
2. Were custody seals intact? ~~Y N~~
3. Were signature and date present on the custody seals? ~~Y N~~
4. Is the shipper's airbill available and filed? If no, record airbill number: enclosed (Y) N
5. COC#

Temperature of cooler(s) upon receipt: (°C)	-0.7	-0.9	-0.1	-1.0	0.6
Temperature Blank: (°C)					

Were samples hand delivered on the same day as collection? ~~Y N~~

6. Were custody papers properly filled out (ink, signed, etc.)? Y (N)
7. Type of packing material present boxes, ice, sleeves
8. **Did all bottles arrive in good condition (unbroken)?** (Y) N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)? (Y) N
10. Did all bottle labels and tags agree with custody papers? (Y) N
11. **Were the correct types of bottles used for the tests indicated?** (Y) N
12. Were all of the preserved bottles received at the lab with the appropriate pH? (Y) N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y N~~
14. Did the bottles originate from CAS/K or a branch laboratory? (Y) (N)
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** ~~Y N~~
16. Was C12/Res negative? (Y) N

Explain any discrepancies: No COC Rec'd. Client faxed one.

RESOLUTION:

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Columbia Analytical Services Inc. **PC**_____
Cooler Receipt and Preservation Form

Project/Client PPB (page #2) Work Order K240_____

Cooler received on _____ and opened on _____ by_____

See page #1

1. Were custody seals on outside of coolers? Y N
   If yes, how many and where?_____
2. Were custody seals intact? Y N
3. Were signature and date present on the custody seals? Y N
4. Is the shipper's airbill available and filed? If no, record airbill number:_____ Y N
5. COC#
   Temperature of cooler(s) upon receipt: (ºC) -0.2 0.4 0.0 -0.8 -0.7
   Temperature Blank: (ºC) ____ ____ ____ ____
   Were samples hand delivered on the same day as collection? Y N
6. Were custody papers properly filled out (ink, signed, etc.)? Y N
7. Type of packing material present_____
8. **Did all bottles arrive in good condition (unbroken)?** Y N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)? Y N
10. Did all bottle labels and tags agree with custody papers? Y N
11. **Were the correct types of bottles used for the tests indicated?** Y N
12. Were all of the preserved bottles received at the lab with the appropriate pH? Y N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? Y N
14. Did the bottles originate from CAS/K or a branch laboratory? Y N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** Y N
16. Was C12/Res negative? Y N

See page #1

Explain any discrepancies:_____

RESOLUTION:_____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Metals

METALS

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: PPB Environmental

Service Request: K2409983

Project No.:

Project Name: PPB-USACE King's Bay 2004

Sample No.	Lab Sample ID.
E-KB04-1-Elutriate	K2409983-001
E-KB04-1-ElutriateD	K2409983-001D
E-KB04-1-ElutriateS	K2409983-001S
E-KB04-2-Elutriate	K2409983-002
E-KB04-3-Elutriate	K2409983-003
E-KB04-4-Elutriate	K2409983-004
E-KB04-5-Elutriate	K2409983-005
E-KB04-5-Dupe-Elutriate	K2409983-006
E-KB04-6-Elutriate	K2409983-007
E-KB04-7-Elutriate	K2409983-008
E-KB04-8-Elutriate	K2409983-009
RS-KB04-Elutriate	K2409983-010
Method Blank	K2409983-MB

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Signature: [signature]

Date: 1/26/05

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/15/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-1-Elutriate
Lab Code: K2409983-001

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.54	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	1.52		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.026		
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.18	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.739		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.270		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	B	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.91		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.146		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	4.03		

% Solids: NA

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/15/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-2-Elutriate
Lab Code: K2409983-002

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.76	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	2.16		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.026		
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.07	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.471		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.074		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	B	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.90		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.054		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	3.97		

% Solids: NA

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/15/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-3-Elutriate
Lab Code: K2409983-003

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.53	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	1.95		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.041		
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.07	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.627		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.148		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	1.73		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.109		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	7.73		

% Solids: NA

Comments:

Columbia Analytical Services

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/15/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.40	U	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	2.03		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.023		
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.18	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	1.560		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.078		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	1.22		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.028		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	12.3		

% Solids: NA

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/15/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.50	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	4.64		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.010	B	
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.32		
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	1.720		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.098		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.96		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.052		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	13.9		

% Solids: NA

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/15/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-5-Dupe-Elutriate
Lab Code: K2409983-006

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.59	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	4.97		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.010	B	
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.25		
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	1.170		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.037		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	1.00		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.009	B	
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	3.82		

% Solids: NA

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/16/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-6-Elutriate
Lab Code: K2409983-007

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.47	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	9.48		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.008	B	
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.16	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	1.180		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.036		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.83		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.006	B	
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	7.99		

% Solids: NA

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/16/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-7-Elutriate
Lab Code: K2409983-008

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.40	U	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	9.10		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.033		
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.11	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.419		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.057		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.68		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.043		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	4.20		

% Solids: NA

Comments:

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/16/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: E-KB04-8-Elutriate
Lab Code: K2409983-009

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.60	B	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	17.4		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.006	B	
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.11	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.346		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.022		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.67		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.018	B	
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	2.81		

% Solids: NA

Comments:

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected: 12/16/04
Date Received: 12/17/04
Units: µG/L
Basis: NA

Sample Name: RS-KB04-Elutriate
Lab Code: K2409983-010

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	1.70		
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	5.59		
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.058		
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.16	B	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.716		
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.067		
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.05	B	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	1.93		
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.054		
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	5.85		

% Solids: NA

Comments:

METALS
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INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Date Collected:
Date Received:
Units: µG/L
Basis: NA

Sample Name: Method Blank
Lab Code: K2409983-MB

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.40	1	1/14/05	1/20/05	0.40	U	
Arsenic	200.8	0.50	0.02	1	1/11/05	1/13/05	0.02	U	
Cadmium	200.8	0.020	0.003	1	1/11/05	1/13/05	0.003	U	
Chromium	200.8	0.20	0.04	1	1/11/05	1/13/05	0.04	U	
Copper	200.8	0.100	0.008	1	1/11/05	1/13/05	0.008	U	
Lead	200.8	0.020	0.009	1	1/11/05	1/13/05	0.009	U	
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	1/11/05	1/13/05	0.02	U	
Silver	200.8	0.020	0.005	1	1/11/05	1/13/05	0.005	U	
Zinc	200.8	0.50	0.02	1	1/11/05	1/13/05	0.02	U	

% Solids: NA

Comments:

METALS
- 5a -
SPIKE SAMPLE RECOVERY

Client: PPB Environmental
Service Request: K2409983
Project No.:
Units: µg/L
Project Name: PPB-USACE King's Bay 2004
Basis: NA
Matrix: WATER
% Solids: NA

Sample Name: E-KB04-1-ElutriateS
Lab Code: K2409983-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	70 - 130	388		0.54	B	400	97		200.8
Mercury	72 - 121	0.98		0.04	B	1.00	94		7470A

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
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DUPLICATES

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409983
Units: µg/L
Basis: NA
% Solids: NA

Sample Name: E-KB04-1-ElutriateD
Lab Code: K2409983-001D

Analyte	Control Limit(%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony		0.54	B	0.46	B	15		200.8
Mercury		0.04	B	0.04	U	200.0		7470A

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS

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LABORATORY CONTROL SAMPLE

Client: PPB Environmental

Service Request: K2409983

Project No.:

Project Name: PPB-USACE King's Bay 2004

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous ug/L True	Aqueous ug/L Found	Aqueous ug/L %R	Solid (mg/kg) True	Solid (mg/kg) Found	Solid (mg/kg) C	Solid (mg/kg) Limits		Solid (mg/kg) %R
Antimony	20.0	18.7	94						
Arsenic	2.00	1.89	95						
Cadmium	2.00	2.04	102						
Chromium	2.00	1.99	100						
Copper	2.00	2.03	102						
Lead	2.00	2.00	100						
Mercury	5.00	5.11	102						
Nickel	2.00	2.02	101						
Silver	2.00	1.98	99						
Zinc	2.00	2.00	100						

METALS
-7-
LABORATORY CONTROL SAMPLE

Client: PPB Environmental

Service Request: K2409983

Project No.:

Project Name: PPB-USACE King's Bay 2004

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous ug/L			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	2.00	1.91	96					
Cadmium	2.00	2.06	103					
Chromium	2.00	1.99	100					
Copper	2.00	1.98	99					
Lead	2.00	1.99	100					
Nickel	2.00	2.04	102					
Silver	2.00	1.99	100					
Zinc	2.00	1.95	98					

Butyltins

Organic Analysis:
Butyltins (as cation)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Cover Page - Organic Analysis Data Package
Butyltins (as cation)

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1-Elutriate	K2409983-001	12/15/2004	12/17/2004
E-KB04-2-Elutriate	K2409983-002	12/15/2004	12/17/2004
E-KB04-3-Elutriate	K2409983-003	12/15/2004	12/17/2004
E-KB04-4-Elutriate	K2409983-004	12/15/2004	12/17/2004
E-KB04-5-Elutriate	K2409983-005	12/15/2004	12/17/2004
E-KB04-5-Dupe-Elutriate	K2409983-006	12/15/2004	12/17/2004
E-KB04-6-Elutriate	K2409983-007	12/16/2004	12/17/2004
E-KB04-7-Elutriate	K2409983-008	12/16/2004	12/17/2004
E-KB04-8-Elutriate	K2409983-009	12/16/2004	12/17/2004
RS-KB04-Elutriate	K2409983-010	12/16/2004	12/17/2004
E-KB04-3-ElutriateMS	KWG0420087-1	12/15/2004	12/17/2004
E-KB04-3-ElutriateDMS	KWG0420087-2	12/15/2004	12/17/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: 1/24/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Butyltins (as cation)

Sample Name:	E-KB04-1-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	12/29/04	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	12/29/04	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	12/29/04	KWG0420087	
n-Butyltin	**0.036**	J	0.050	0.0047	1	12/20/04	12/29/04	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	93	19-146	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: E-KB04-2-Elutriate
Lab Code: K2409983-002

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	12/29/04	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	12/29/04	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	12/29/04	KWG0420087	
n-Butyltin	**0.025**	J	0.050	0.0047	1	12/20/04	12/29/04	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	76	19-146	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: E-KB04-3-Elutriate
Lab Code: K2409983-003

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	12/29/04	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	12/29/04	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	12/29/04	KWG0420087	
n-Butyltin	**0.022**	J	0.050	0.0047	1	12/20/04	12/29/04	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	79	19-146	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.025**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	102	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.022**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	83	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: E-KB04-5-Dupe-Elutriate
Lab Code: K2409983-006

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.028**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	71	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: E-KB04-6-Elutriate
Lab Code: K2409983-007

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.025**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	81	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Butyltins (as cation)

Sample Name:	E-KB04-7-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-008	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.026**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	73	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Butyltins (as cation)

Sample Name:	E-KB04-8-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-009	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.028**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	80	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Butyltins (as cation)

Sample Name: RS-KB04-Elutriate
Lab Code: K2409983-010

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	01/04/05	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	01/04/05	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	01/04/05	KWG0420087	
n-Butyltin	**0.028**	J	0.050	0.0047	1	12/20/04	01/04/05	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	86	19-146	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: NA
Date Received: NA

Butyltins (as cation)

Sample Name: Method Blank
Lab Code: KWG0420087-4

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/20/04	12/29/04	KWG0420087	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/20/04	12/29/04	KWG0420087	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/20/04	12/29/04	KWG0420087	
n-Butyltin	ND	U	0.050	0.0047	1	12/20/04	12/29/04	KWG0420087	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	93	19-146	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Extracted:**	12/20/2004
Sample Matrix:	Water	**Date Analyzed:**	12/29/2004 - 12/30/2004

Matrix Spike/Duplicate Matrix Spike Summary
Butyltins (as cation)

Sample Name:	E-KB04-3-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-003	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	Krone	**Extraction Lot:**	KWG0420087

		E-KB04-3-ElutriateMS KWG0420087-1 Matrix Spike			E-KB04-3-ElutriateDMS KWG0420087-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Tetra-n-butyltin	ND	0.264	0.500	53	0.304	0.500	61	10-93	14	30
Tri-n-butyltin	ND	0.321	0.446	72	0.338	0.446	76	14-143	5	30
Di-n-butyltin	ND	0.231	0.384	60	0.232	0.384	60	10-151	0	30
n-Butyltin	0.022	0.239	0.312	70	0.272	0.312	80	10-151	13	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-1-Elutriate
Lab Code: K2409983-001
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.036	0.030	18.2	J	1	12/29/04

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-2-Elutriate
Lab Code: K2409983-002
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.025	0.024	4.1	J	1	12/29/04

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-3-Elutriate
Lab Code: K2409983-003
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.022	0.021	4.7	J	1	12/29/04

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.025	0.025	0.0	J	1	01/04/05

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.022	0.019	14.6	J	1	01/04/05

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004
		Date Extracted:	12/20/2004

Butyltins (as cation)

Sample Name:	E-KB04-5-Dupe-Elutriate	**Units:**	ug/L
Lab Code:	K2409983-006	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.028	0.026	7.4	J	1	01/04/05

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-6-Elutriate
Lab Code: K2409983-007
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.025	0.025	0.0	J	1	01/04/05

Oil & Grease
EPA Method 1664

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-1-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-2-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	0.67	J

Approved By: _____ Date: 01/06/05

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-3-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-4-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-5-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	0.76	J

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-5-Dupe-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-6-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	0.67	J

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-7-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-008	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	0.67	J

Approved By: _____ Date: 01/06/05

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	E-KB04-8-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-009	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/16/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004

Oil and Grease

Sample Name:	RS-KB04-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-010	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: g Date: 010605

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Oil and Grease

Sample Name:	Method Blank	Units:	mg/L (ppm)
Lab Code:	K050104-WB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 016605

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/15/2004
Sample Matrix:	Water	**Date Received:**	12/17/2004
		Date Extracted:	1/4/2005
		Date Analyzed:	1/5/2005

Matrix Spike/Duplicate Matrix Spike Summary
Oil and Grease

Sample Name:	E-KB04-1-Elutriate	Units:	mg/L (ppm)
Lab Code:	K2409983-001MS, K2409983-001DMS	Basis:	NA
Test Notes:			

				Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent	Result
Analyte	**Prep Method**	**Analysis Method**	**MRL**	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**	**Notes**
Oil and Grease, Total (HEM)	METHOD	1664	5.0	39	39	ND	33.1	36.6	85	94	78-114	10	

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DMS/072898 K09983PHC.cq1 - DMS 1/6/2005

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409983
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	1/4/2005
		Date Analyzed:	1/5/2005

Laboratory Control Sample Summary
Oil and Grease

Sample Name:	Lab Control Sample	Units:	mg/L (ppm)
Lab Code:	K050104-WL	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	40	36.7	92	78-114	

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Oil & Grease
EPA Method 9071

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/7/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-1	Units:	mg/Kg (ppm)
Lab Code:	K2409889-001	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/7/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-1	Units:	mg/Kg (ppm)
Lab Code:	K2409889-001	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/9/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-2	Units:	mg/Kg (ppm)
Lab Code:	K2409889-002	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/9/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-2	Units:	mg/Kg (ppm)
Lab Code:	K2409889-002	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/9/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-3	Units:	mg/Kg (ppm)
Lab Code:	K2409889-003	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/9/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-3	Units:	mg/Kg (ppm)
Lab Code:	K2409889-003	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/9/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-4	Units:	mg/Kg (ppm)
Lab Code:	K2409889-004	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/9/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-4	Units:	mg/Kg (ppm)
Lab Code:	K2409889-004	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-5	Units:	mg/Kg (ppm)
Lab Code:	K2409889-005	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-5	Units:	mg/Kg (ppm)
Lab Code:	K2409889-005	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-5 dupe	Units:	mg/Kg (ppm)
Lab Code:	K2409889-006	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	160	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-5 dupe	Units:	mg/Kg (ppm)
Lab Code:	K2409889-006	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 01/05

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-6	Units:	mg/Kg (ppm)
Lab Code:	K2409889-007	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	110	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-6	Units:	mg/Kg (ppm)
Lab Code:	K2409889-007	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 01/07/05

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-7	Units:	mg/Kg (ppm)
Lab Code:	K2409889-008	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 01/07/05

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-7	Units:	mg/Kg (ppm)
Lab Code:	K2409889-008	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

1S22/020597p

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-8	Units:	mg/Kg (ppm)
Lab Code:	K2409889-009	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	160	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	E-KB04-8	Units:	mg/Kg (ppm)
Lab Code:	K2409889-009	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	RS-KB04	Units:	mg/Kg (ppm)
Lab Code:	K2409889-010	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

1S22/020597p

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Oil and Grease

Sample Name:	RS-KB04	Units:	mg/Kg (ppm)
Lab Code:	K2409889-010	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Oil and Grease

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	K041228-SB	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	12/28/2004	1/3/2005	ND	

Approved By: _____ Date: 010705

1S22/020597p

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Oil and Grease

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	K050104-MB	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	1	1/4/2005	1/5/2005	ND	

Approved By: _____ Date: 1/07/05

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004
		Date Extracted:	12/28/2004
		Date Analyzed:	1/3/2005

Matrix Spike/Duplicate Matrix Spike Summary
Oil and Grease

Sample Name:	RS-KB04		Units:	mg/Kg (ppm)
Lab Code:	K2409889-010MS,	K2409889-010DMS	Basis:	Dry
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery		CAS	Relative
Analyte	**Prep Method**	**Analysis Method**	**MRL**	MS	DMS	**Result**	MS	DMS	MS	DMS	Acceptance Limits	**Percent Difference**
Oil and Grease, Total (HEM)	EPA 9071A	1664	100	2600	2600	ND	2740	2600	105	100	78-114	5

Approved By: _____ Date: 010705

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
LCS Matrix:	Sediment	**Date Received:**	NA
		Date Extracted:	12/28/2004
		Date Analyzed:	1/3/2005

Laboratory Control Sample Summary
Oil and Grease

Sample Name:	Lab Control Sample	Units:	mg/Kg (ppm)
Lab Code:	K041228-SL	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Oil and Grease, Total (HEM)	EPA 9071A	1664	2000	1980	99	78-114	

Approved By: _____ Date: 01/07/05

LCS/071499p
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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
LCS Matrix:	Sediment	**Date Received:**	NA
		Date Extracted:	1/4/2005
		Date Analyzed:	1/5/2005

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Oil and Grease

Sample Name:	Lab Control Sample	Units:	mg/Kg (ppm)
Lab Code:	K050104-SL, K050104-SL2	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference
Oil and Grease, Total (HEM)	EPA 9071A	1664	2000	2000	2010	2000	101	100	78-114	<1

Approved By: _____ Date: 010705

DLCS/072898p
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Organochlorine Pesticides
EPA Method 8081

Organic Analysis:
Organochlorine Pesticides

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: USACE King's Bay 2004

Service Request: K2409889

Cover Page - Organic Analysis Data Package
Organochlorine Pesticides

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1	K2409889-001	12/07/2004	12/15/2004
E-KB04-2	K2409889-002	12/09/2004	12/15/2004
E-KB04-3	K2409889-003	12/09/2004	12/15/2004
E-KB04-4	K2409889-004	12/09/2004	12/15/2004
E-KB04-5	K2409889-005	12/08/2004	12/15/2004
E-KB04-5 dupe	K2409889-006	12/08/2004	12/15/2004
E-KB04-6	K2409889-007	12/08/2004	12/15/2004
E-KB04-7	K2409889-008	12/08/2004	12/15/2004
E-KB04-8	K2409889-009	12/08/2004	12/15/2004
RS-KB04	K2409889-010	12/08/2004	12/15/2004
E-KB04-1MS	KWG0420171-1	12/07/2004	12/15/2004
E-KB04-1DMS	KWG0420171-2	12/07/2004	12/15/2004
E-KB04-2MS	KWG0420171-4	12/09/2004	12/15/2004
E-KB04-2DMS	KWG0420171-5	12/09/2004	12/15/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Todd Lynn

Date: 1/25/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/07/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-1
Lab Code: K2409889-001

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.28	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.18	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.32	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.0	0.18	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.0	0.14	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.0	0.095	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.0	0.30	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.0	0.076	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.0	0.12	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.0	0.20	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.27	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.0	0.22	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**0.77**	BJ	1.0	0.24	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	50	9.1	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	10	1.5	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	78	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-2
Lab Code: K2409889-002

Extraction Method: EPA 3540C
Analysis Method: 8081A

Units: ug/Kg
Basis: Dry

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.29	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.33	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.0	0.15	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	**0.21**	J	1.0	0.10	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.0	0.32	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.0	0.080	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.0	0.21	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.28	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.0	0.23	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**0.90**	BJ	1.0	0.25	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	50	9.6	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	10	1.6	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	91	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-3
Lab Code: K2409889-003

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.29	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.33	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	**0.28**	J	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.0	0.15	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.0	0.32	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.0	0.080	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.0	0.21	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.28	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.0	0.23	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**0.67**	BJP	1.0	0.25	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	50	9.5	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	Ui	10	3.1	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	91	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-4
Lab Code: K2409889-004

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.32	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.21	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.15	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.37	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.0	0.21	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.0	0.16	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.0	0.12	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.0	0.35	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.0	0.089	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.0	0.24	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.31	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.0	0.25	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**0.86**	BJP	1.0	0.28	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	50	11	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	Ui	10	4.0	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	86	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-5
Lab Code: K2409889-005

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.49	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	Ui	1.0	0.28	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.31	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.22	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.56	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.0	0.31	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.0	0.25	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.0	0.17	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.0	0.53	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.0	0.14	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.0	0.21	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.0	0.36	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.47	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.0	0.38	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**1.3**	B	1.0	0.42	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	50	17	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	10	2.7	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	93	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-5 dupe
Lab Code: K2409889-006

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.18	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.46	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	1.0	0.21	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.29	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.20	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.52	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	Ui	1.0	0.96	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.0	0.16	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	Ui	1.0	0.90	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	Ui	1.0	1.0	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.0	0.20	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	**1.3**	P	1.0	0.33	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.44	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	**7.4**		1.0	0.36	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**1.3**	BP	1.0	0.40	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	Ui	50	33	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	Ui	48	48	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	89	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-6
Lab Code: K2409889-007

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.5	0.31	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.5	0.80	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	1.5	0.36	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.5	0.51	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.5	0.36	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.5	0.91	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.5	0.51	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.5	0.40	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.5	0.30	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.5	0.28	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.5	0.88	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.5	0.23	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.5	0.34	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.5	0.59	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.5	0.77	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.5	0.62	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**1.6**	B	1.5	0.70	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	Ui	73	31	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	15	4.4	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	99	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-7
Lab Code: K2409889-008

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.2	0.24	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.2	0.63	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	Ui	1.2	1.2	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.2	0.40	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.2	0.28	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.2	0.72	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.2	0.40	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	Ui	1.2	0.34	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.2	0.24	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.2	0.22	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.2	0.69	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.2	0.18	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	**1.4**	P	1.2	0.27	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.2	0.46	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.2	0.60	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	**17**		1.2	0.49	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**1.7**	B	1.2	0.54	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	Ui	57	26	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	12	3.5	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	100	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: E-KB04-8
Lab Code: K2409889-009

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.1	0.23	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.1	0.61	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	Ui	1.1	0.99	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.1	0.39	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.1	0.27	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.1	0.69	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.1	0.39	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.1	0.31	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.1	0.23	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.1	0.21	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.1	0.66	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.1	0.17	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.1	0.26	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.1	0.44	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.1	0.58	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.1	0.47	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**1.5**	B	1.1	0.53	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	55	21	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	11	3.3	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	100	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Organochlorine Pesticides

Sample Name: RS-KB04
Lab Code: K2409889-010

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	1.0	0.12	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	1.0	0.30	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	1.0	0.14	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	1.0	0.14	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	1.0	0.34	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	1.0	0.19	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	1.0	0.15	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	1.0	0.12	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	1.0	0.11	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	1.0	0.33	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	1.0	0.083	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	1.0	0.13	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	1.0	0.22	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	1.0	0.29	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	1.0	0.23	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**1.0**	B	1.0	0.26	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	50	9.9	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	10	1.7	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	82	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Organochlorine Pesticides

Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KWG0420171-7	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.40	0.083	1	12/21/04	01/19/05	KWG0420171	
beta-BHC	ND	U	0.40	0.22	1	12/21/04	01/19/05	KWG0420171	
gamma-BHC (Lindane)	ND	U	0.40	0.099	1	12/21/04	01/19/05	KWG0420171	
delta-BHC	ND	U	0.40	0.14	1	12/21/04	01/19/05	KWG0420171	
Heptachlor	ND	U	0.40	0.097	1	12/21/04	01/19/05	KWG0420171	
Aldrin	ND	U	0.40	0.25	1	12/21/04	01/19/05	KWG0420171	
Heptachlor Epoxide	ND	U	0.40	0.14	1	12/21/04	01/19/05	KWG0420171	
Endosulfan I	ND	U	0.40	0.11	1	12/21/04	01/19/05	KWG0420171	
Dieldrin	ND	U	0.40	0.082	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDE	ND	U	0.40	0.076	1	12/21/04	01/19/05	KWG0420171	
Endrin	ND	U	0.40	0.24	1	12/21/04	01/19/05	KWG0420171	
Endosulfan II	ND	U	0.40	0.061	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDD	ND	U	0.40	0.093	1	12/21/04	01/19/05	KWG0420171	
Endrin Aldehyde	ND	U	0.40	0.16	1	12/21/04	01/19/05	KWG0420171	
Endosulfan Sulfate	ND	U	0.40	0.21	1	12/21/04	01/19/05	KWG0420171	
4,4'-DDT	ND	U	0.40	0.17	1	12/21/04	01/19/05	KWG0420171	
Methoxychlor	**0.47**		0.40	0.19	1	12/21/04	01/19/05	KWG0420171	
Toxaphene	ND	U	20	7.3	1	12/21/04	01/19/05	KWG0420171	
Chlordane	ND	U	4.0	1.2	1	12/21/04	01/19/05	KWG0420171	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	93	38-125	01/19/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/21/2004
Date Analyzed: 01/19/2005

Matrix Spike/Duplicate Matrix Spike Summary
Organochlorine Pesticides

Sample Name: E-KB04-1
Lab Code: K2409889-001

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low
Extraction Lot: KWG0420171

Analyte Name	Sample Result	E-KB04-1MS KWG0420171-1 Matrix Spike			E-KB04-1DMS KWG0420171-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
alpha-BHC	ND	21.0	19.9	105	20.3	19.9	102	41-148	3	50
beta-BHC	ND	22.5	19.9	113	21.9	19.9	110	37-152	3	50
gamma-BHC (Lindane)	ND	21.6	19.9	108	20.7	19.9	104	45-153	4	50
delta-BHC	ND	22.7	19.9	114	21.9	19.9	110	35-162	4	50
Heptachlor	ND	19.6	19.9	99	19.6	19.9	98	35-151	0	50
Aldrin	ND	20.1	19.9	101	19.8	19.9	99	39-143	2	50
Heptachlor Epoxide	ND	21.1	19.9	106	20.4	19.9	102	37-148	4	50
Endosulfan I	ND	13.7	19.9	69	13.3	19.9	67	10-141	3	50
Dieldrin	ND	20.7	19.9	104	20.1	19.9	101	48-142	3	50
4,4'-DDE	ND	22.6	19.9	113	21.5	19.9	108	35-146	5	50
Endrin	ND	21.2	19.9	106	20.5	19.9	103	44-146	3	50
Endosulfan II	ND	15.2	19.9	76	14.8	19.9	74	21-135	2	50
4,4'-DDD	ND	21.6	19.9	108	20.8	19.9	104	32-156	4	50
Endrin Aldehyde	ND	17.9	19.9	90	17.4	19.9	87	18-137	3	50
Endosulfan Sulfate	ND	19.9	19.9	100	19.3	19.9	97	39-148	3	50
4,4'-DDT	ND	22.5	19.9	113	22.0	19.9	110	31-161	2	50
Methoxychlor	0.77	24.9	19.9	121	23.6	19.9	115	35-158	5	50

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/21/2004
Date Analyzed: 01/19/2005

Matrix Spike/Duplicate Matrix Spike Summary
Organochlorine Pesticides

Sample Name: E-KB04-2
Lab Code: K2409889-002

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8081A

Level: Low
Extraction Lot: KWG0420171

Analyte Name	Sample Result	E-KB04-2MS KWG0420171-4 Matrix Spike			E-KB04-2DMS KWG0420171-5 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Toxaphene	ND	193	200	97	187	200	94	52-156	3	50
Chlordane	ND	180	200	90	178	200	89	28-142	1	50

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/21/2004
Date Analyzed: 01/19/2005

Lab Control Spike Summary
Organochlorine Pesticides

Extraction Method: EPA 3540C
Analysis Method: 8081A

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0420171

Analyte Name	Lab Control Sample KWG0420171-3 Lab Control Spike Result	Expected	%Rec	%Rec Limits
alpha-BHC	21.0	20.0	105	67-130
beta-BHC	21.8	20.0	109	66-134
gamma-BHC (Lindane)	20.4	20.0	102	70-125
delta-BHC	21.4	20.0	107	78-139
Heptachlor	19.9	20.0	99	69-120
Aldrin	19.9	20.0	99	67-120
Heptachlor Epoxide	20.0	20.0	100	70-117
Endosulfan I	13.1	20.0	65	50-112
Dieldrin	19.6	20.0	98	74-121
4,4'-DDE	19.8	20.0	99	73-126
Endrin	20.0	20.0	100	76-127
Endosulfan II	14.6	20.0	73	59-116
4,4'-DDD	20.0	20.0	100	74-130
Endrin Aldehyde	17.7	20.0	89	29-138
Endosulfan Sulfate	18.9	20.0	95	70-124
4,4'-DDT	21.5	20.0	107	75-132
Methoxychlor	22.9	20.0	114	68-137
Toxaphene	194	200	97	52-142
Chlordane	180	200	90	57-122

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Polychlorinated Biphenyls
PCB's
EPA Method 8082

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: USACE King's Bay 2004

Service Request: K2409889

Cover Page - Organic Analysis Data Package
Polychlorinated Biphenyls (PCBs)

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1	K2409889-001	12/07/2004	12/15/2004
E-KB04-2	K2409889-002	12/09/2004	12/15/2004
E-KB04-3	K2409889-003	12/09/2004	12/15/2004
E-KB04-4	K2409889-004	12/09/2004	12/15/2004
E-KB04-5	K2409889-005	12/08/2004	12/15/2004
E-KB04-5 dupe	K2409889-006	12/08/2004	12/15/2004
E-KB04-6	K2409889-007	12/08/2004	12/15/2004
E-KB04-7	K2409889-008	12/08/2004	12/15/2004
E-KB04-8	K2409889-009	12/08/2004	12/15/2004
RS-KB04	K2409889-010	12/08/2004	12/15/2004
E-KB04-3MS	KWG0420172-1	12/09/2004	12/15/2004
E-KB04-3DMS	KWG0420172-2	12/09/2004	12/15/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Todd Blair

Date: 1/10/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/07/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-1
Lab Code: K2409889-001

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	10	2.3	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-2
Lab Code: K2409889-002

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	90	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-3
Lab Code: K2409889-003

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	10	2.4	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	88	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-4
Lab Code: K2409889-004

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	10	2.7	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-5
Lab Code: K2409889-005

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	4.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	**69**		10	4.0	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	119	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-5 dupe
Lab Code: K2409889-006

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	**110**		10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	10	3.8	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-6
Lab Code: K2409889-007

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	30	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	15	6.6	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	**16**		15	6.6	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	95	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-7
Lab Code: K2409889-008

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	23	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	12	5.2	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	**8.4**	**J**	12	5.2	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	89	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-8
Lab Code: K2409889-009

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	22	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	11	5.0	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	**14**		11	5.0	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	88	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: RS-KB04
Lab Code: K2409889-010

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	20	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	10	2.5	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Polychlorinated Biphenyls (PCBs)

Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KWG0420172-4	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1221	ND	U	8.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1232	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1242	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1248	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1254	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1260	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1262	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	
Aroclor 1268	ND	U	4.0	1.8	1	12/21/04	01/05/05	KWG0420172	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	93	40-145	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Extracted:**	12/21/2004
Sample Matrix:	Sediment	**Date Analyzed:**	01/05/2005

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name:	E-KB04-3	**Units:**	ug/Kg
Lab Code:	K2409889-003	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082	**Extraction Lot:**	KWG0420172

		E-KB04-3MS KWG0420172-1 Matrix Spike			E-KB04-3DMS KWG0420172-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	ND	217	200	109	211	200	106	36-153	3	50
Aroclor 1260	ND	218	200	109	215	200	108	43-153	1	50

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/21/2004
Date Analyzed: 01/05/2005

Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0420172

	Lab Control Sample KWG0420172-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Aroclor 1016	207	200	104	50-132
Aroclor 1260	212	200	106	56-138

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Congener Specific PCB's
EPA Method 8082

Organic Analysis:
Congener Specific PCBs

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: USACE King's Bay 2004

Service Request: K2409889

Cover Page - Organic Analysis Data Package
Congener Specific PCBs

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1	K2409889-001	12/07/2004	12/15/2004
E-KB04-2	K2409889-002	12/09/2004	12/15/2004
E-KB04-3	K2409889-003	12/09/2004	12/15/2004
E-KB04-4	K2409889-004	12/09/2004	12/15/2004
E-KB04-5	K2409889-005	12/08/2004	12/15/2004
E-KB04-5 dupe	K2409889-006	12/08/2004	12/15/2004
E-KB04-6	K2409889-007	12/08/2004	12/15/2004
E-KB04-7	K2409889-008	12/08/2004	12/15/2004
E-KB04-8	K2409889-009	12/08/2004	12/15/2004
RS-KB04	K2409889-010	12/08/2004	12/15/2004
E-KB04-4MS	KWG0420173-1	12/09/2004	12/15/2004
E-KB04-4DMS	KWG0420173-2	12/09/2004	12/15/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Todd Rynam

Date: 1/14/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/07/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-1
Lab Code: K2409889-001

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.11	1	12/21/04	01/03/05	KWG0420173	
PCB 18	ND	U	0.50	0.037	1	12/21/04	01/03/05	KWG0420173	
PCB 28	ND	U	0.50	0.32	1	12/21/04	01/03/05	KWG0420173	
PCB 44	ND	U	0.50	0.23	1	12/21/04	01/03/05	KWG0420173	
PCB 52	ND	U	0.50	0.059	1	12/21/04	01/03/05	KWG0420173	
PCB 66	ND	U	0.50	0.046	1	12/21/04	01/03/05	KWG0420173	
PCB 101	ND	U	0.50	0.038	1	12/21/04	01/03/05	KWG0420173	
PCB 138	ND	U	0.50	0.038	1	12/21/04	01/03/05	KWG0420173	
PCB 180	ND	U	0.50	0.039	1	12/21/04	01/03/05	KWG0420173	
PCB 187	ND	U	0.50	0.045	1	12/21/04	01/03/05	KWG0420173	
PCB 206	ND	U	0.50	0.069	1	12/21/04	01/03/05	KWG0420173	
PCB 209	ND	U	0.50	0.063	1	12/21/04	01/03/05	KWG0420173	
PCB 77	ND	U	0.50	0.081	1	12/21/04	01/03/05	KWG0420173	
PCB 105	ND	U	0.50	0.050	1	12/21/04	01/03/05	KWG0420173	
PCB 118	ND	U	0.50	0.049	1	12/21/04	01/03/05	KWG0420173	
PCB 126	ND	U	0.50	0.049	1	12/21/04	01/03/05	KWG0420173	
PCB 128	ND	U	0.50	0.32	1	12/21/04	01/03/05	KWG0420173	
PCB 153	ND	U	0.50	0.049	1	12/21/04	01/03/05	KWG0420173	
PCB 169	ND	U	0.50	0.040	1	12/21/04	01/03/05	KWG0420173	
PCB 170	ND	U	0.50	0.041	1	12/21/04	01/03/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	90	10-128	01/03/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-2
Lab Code: K2409889-002

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.50	0.038	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.50	0.33	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.50	0.24	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.50	0.062	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	U	0.50	0.049	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.50	0.040	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.50	0.040	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	U	0.50	0.041	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	U	0.50	0.047	1	12/21/04	01/04/05	KWG0420173	
PCB 206	ND	U	0.50	0.072	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	U	0.50	0.066	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.50	0.085	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.50	0.053	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.50	0.051	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.50	0.051	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.50	0.33	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.50	0.051	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.50	0.042	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.50	0.044	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	98	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-3
Lab Code: K2409889-003

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.50	0.038	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.50	0.33	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.50	0.24	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.50	0.061	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	U	0.50	0.048	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.50	0.039	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.50	0.039	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	U	0.50	0.041	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	U	0.50	0.047	1	12/21/04	01/04/05	KWG0420173	
PCB 206	ND	U	0.50	0.072	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	U	0.50	0.065	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.50	0.085	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.50	0.052	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.50	0.051	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.50	0.051	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.50	0.33	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.50	0.051	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.50	0.042	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.50	0.043	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	93	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-4
Lab Code: K2409889-004

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.13	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.50	0.043	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.50	0.37	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.50	0.27	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.50	0.069	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	U	0.50	0.054	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.50	0.044	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.50	0.044	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	U	0.50	0.045	1	12/21/04	01/04/05	KWG0420173	
PCB 187	**0.093**	J	0.50	0.053	1	12/21/04	01/04/05	KWG0420173	
PCB 206	**1.4**		0.50	0.080	1	12/21/04	01/04/05	KWG0420173	
PCB 209	**0.43**	J	0.50	0.073	1	12/21/04	01/04/05	KWG0420173	*
PCB 77	ND	U	0.50	0.095	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.50	0.059	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.50	0.057	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.50	0.057	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.50	0.37	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.50	0.057	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.50	0.047	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.50	0.048	1	12/21/04	01/04/05	KWG0420173	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	89	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-5
Lab Code: K2409889-005

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.20	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	Ui	0.50	0.068	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.56	0.56	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.50	0.40	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.50	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	Ui	0.50	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.50	0.067	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.50	0.067	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	Ui	0.50	0.094	1	12/21/04	01/04/05	KWG0420173	
PCB 187	**0.21**	J	0.50	0.080	1	12/21/04	01/04/05	KWG0420173	
PCB 206	**1.8**		0.50	0.13	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	Ui	0.50	0.45	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.50	0.15	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.50	0.089	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.50	0.086	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.50	0.086	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.56	0.56	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.50	0.086	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.50	0.071	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.50	0.073	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	93	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-5 dupe
Lab Code: K2409889-006

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.18	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.50	0.060	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.52	0.52	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.50	0.38	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.50	0.097	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	Ui	0.50	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.50	0.062	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.50	0.062	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	Ui	0.50	0.10	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	Ui	0.50	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 206	ND	Ui	0.61	0.61	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	Ui	0.50	0.17	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.50	0.14	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.50	0.083	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.50	0.081	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.50	0.081	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.52	0.52	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.50	0.081	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.50	0.066	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.50	0.069	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	90	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-6
Lab Code: K2409889-007

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.73	0.32	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.73	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.91	0.91	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.73	0.66	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.73	0.18	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	Ui	0.73	0.73	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.73	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.73	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	Ui	0.73	0.14	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	Ui	0.73	0.36	1	12/21/04	01/04/05	KWG0420173	
PCB 206	ND	Ui	2.6	2.6	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	Ui	0.73	0.63	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.73	0.24	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.73	0.15	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.73	0.15	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.73	0.15	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.91	0.91	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.73	0.15	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.73	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.73	0.12	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	90	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-7
Lab Code: K2409889-008

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.57	0.25	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	Ui	0.57	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.72	0.72	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.57	0.52	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.57	0.14	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	Ui	0.57	0.23	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	Ui	0.57	0.15	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	Ui	0.57	0.14	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	Ui	0.57	0.22	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	Ui	0.58	0.58	1	12/21/04	01/04/05	KWG0420173	
PCB 206	ND	Ui	2.2	2.2	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	Ui	0.60	0.60	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.57	0.19	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.57	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.57	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	Ui	0.57	0.26	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.72	0.72	1	12/21/04	01/04/05	KWG0420173	
PCB 153	**0.52**	JP	0.57	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.57	0.091	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.57	0.094	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	87	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: E-KB04-8
Lab Code: K2409889-009

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.55	0.24	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.55	0.080	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.69	0.69	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.55	0.50	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.55	0.13	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	Ui	0.55	0.17	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.55	0.083	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.55	0.083	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	Ui	0.55	0.25	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	Ui	0.59	0.59	1	12/21/04	01/04/05	KWG0420173	
PCB 206	**8.3**		0.55	0.16	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	Ui	2.0	2.0	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.55	0.18	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.55	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.55	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.55	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.69	0.69	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.55	0.11	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.55	0.088	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.55	0.091	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	89	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Congener Specific PCBs

Sample Name: RS-KB04
Lab Code: K2409889-010

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.50	0.12	1	12/21/04	01/04/05	KWG0420173	
PCB 18	ND	U	0.50	0.040	1	12/21/04	01/04/05	KWG0420173	
PCB 28	ND	U	0.50	0.34	1	12/21/04	01/04/05	KWG0420173	
PCB 44	ND	U	0.50	0.25	1	12/21/04	01/04/05	KWG0420173	
PCB 52	ND	U	0.50	0.064	1	12/21/04	01/04/05	KWG0420173	
PCB 66	ND	U	0.50	0.050	1	12/21/04	01/04/05	KWG0420173	
PCB 101	ND	U	0.50	0.041	1	12/21/04	01/04/05	KWG0420173	
PCB 138	ND	U	0.50	0.041	1	12/21/04	01/04/05	KWG0420173	
PCB 180	ND	U	0.50	0.042	1	12/21/04	01/04/05	KWG0420173	
PCB 187	ND	U	0.50	0.049	1	12/21/04	01/04/05	KWG0420173	
PCB 206	ND	U	0.50	0.075	1	12/21/04	01/04/05	KWG0420173	
PCB 209	ND	U	0.50	0.068	1	12/21/04	01/04/05	KWG0420173	
PCB 77	ND	U	0.50	0.088	1	12/21/04	01/04/05	KWG0420173	
PCB 105	ND	U	0.50	0.054	1	12/21/04	01/04/05	KWG0420173	
PCB 118	ND	U	0.50	0.053	1	12/21/04	01/04/05	KWG0420173	
PCB 126	ND	U	0.50	0.053	1	12/21/04	01/04/05	KWG0420173	
PCB 128	ND	U	0.50	0.34	1	12/21/04	01/04/05	KWG0420173	
PCB 153	ND	U	0.50	0.053	1	12/21/04	01/04/05	KWG0420173	
PCB 169	ND	U	0.50	0.044	1	12/21/04	01/04/05	KWG0420173	
PCB 170	ND	U	0.50	0.045	1	12/21/04	01/04/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	89	10-128	01/04/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: NA
Date Received: NA

Congener Specific PCBs

Sample Name: Method Blank
Lab Code: KWG0420173-4

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	0.20	0.087	1	12/21/04	01/03/05	KWG0420173	
PCB 18	ND	U	0.20	0.029	1	12/21/04	01/03/05	KWG0420173	
PCB 28	ND	U	0.25	0.25	1	12/21/04	01/03/05	KWG0420173	
PCB 44	ND	U	0.20	0.18	1	12/21/04	01/03/05	KWG0420173	
PCB 52	ND	U	0.20	0.047	1	12/21/04	01/03/05	KWG0420173	
PCB 66	ND	U	0.20	0.037	1	12/21/04	01/03/05	KWG0420173	
PCB 101	ND	U	0.20	0.030	1	12/21/04	01/03/05	KWG0420173	
PCB 138	ND	U	0.20	0.030	1	12/21/04	01/03/05	KWG0420173	
PCB 180	ND	U	0.20	0.031	1	12/21/04	01/03/05	KWG0420173	
PCB 187	ND	U	0.20	0.036	1	12/21/04	01/03/05	KWG0420173	
PCB 206	ND	U	0.20	0.055	1	12/21/04	01/03/05	KWG0420173	
PCB 209	ND	U	0.20	0.050	1	12/21/04	01/03/05	KWG0420173	
PCB 77	ND	U	0.20	0.065	1	12/21/04	01/03/05	KWG0420173	
PCB 105	ND	U	0.20	0.040	1	12/21/04	01/03/05	KWG0420173	
PCB 118	ND	U	0.20	0.039	1	12/21/04	01/03/05	KWG0420173	
PCB 126	ND	U	0.20	0.039	1	12/21/04	01/03/05	KWG0420173	
PCB 128	ND	U	0.25	0.25	1	12/21/04	01/03/05	KWG0420173	
PCB 153	ND	U	0.20	0.039	1	12/21/04	01/03/05	KWG0420173	
PCB 169	ND	U	0.20	0.032	1	12/21/04	01/03/05	KWG0420173	
PCB 170	ND	U	0.20	0.033	1	12/21/04	01/03/05	KWG0420173	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	94	10-128	01/03/05	Acceptable

Comments:

Semi-Volatile Organic Compounds
EPA Method 8270C

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: USACE King's Bay 2004

Service Request: K2409889

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1	K2409889-001	12/07/2004	12/15/2004
E-KB04-2	K2409889-002	12/09/2004	12/15/2004
E-KB04-3	K2409889-003	12/09/2004	12/15/2004
E-KB04-4	K2409889-004	12/09/2004	12/15/2004
E-KB04-5	K2409889-005	12/08/2004	12/15/2004
E-KB04-5 dupe	K2409889-006	12/08/2004	12/15/2004
E-KB04-6	K2409889-007	12/08/2004	12/15/2004
E-KB04-7	K2409889-008	12/08/2004	12/15/2004
E-KB04-8	K2409889-009	12/08/2004	12/15/2004
RS-KB04	K2409889-010	12/08/2004	12/15/2004
E-KB04-5MS	KWG0419967-3	12/08/2004	12/15/2004
E-KB04-5DMS	KWG0419967-4	12/08/2004	12/15/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Carl Degner

Date: 1/19/05 Title: SVM Supervisor

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409889
Project:	USACE King's Bay 2004	**Date Collected:**	12/07/2004
Sample Matrix:	Sediment	**Date Received:**	12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name:	E-KB04-1	**Units:**	ug/Kg
Lab Code:	K2409889-001	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.7**	J	3.2	0.43	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**0.53**	J	3.2	0.43	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**0.48**	J	3.2	0.32	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	ND	U	3.2	0.28	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	3.2	0.20	1	12/17/04	01/08/05	KWG0419967	
Fluorene	ND	U	3.2	0.24	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	ND	U	3.2	0.41	1	12/17/04	01/08/05	KWG0419967	
Anthracene	ND	U	3.2	0.28	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	ND	U	3.2	0.43	1	12/17/04	01/08/05	KWG0419967	
Pyrene	ND	U	3.2	0.45	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	ND	U	3.2	0.20	1	12/17/04	01/08/05	KWG0419967	
Chrysene	ND	U	3.2	0.51	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	ND	U	3.2	0.60	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	ND	U	3.2	0.41	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	ND	U	3.2	0.28	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	ND	U	3.2	0.30	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	3.2	0.33	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	ND	U	3.2	0.29	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	49	27-110	01/08/05	Acceptable
Fluoranthene-d10	60	34-122	01/08/05	Acceptable
Terphenyl-d14	78	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-2
Lab Code: K2409889-002

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.4**	J	3.3	0.45	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**0.55**	J	3.3	0.45	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**0.40**	J	3.3	0.33	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	ND	U	3.3	0.29	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	3.3	0.21	1	12/17/04	01/08/05	KWG0419967	
Fluorene	ND	U	3.3	0.25	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	ND	U	3.3	0.44	1	12/17/04	01/08/05	KWG0419967	
Anthracene	ND	U	3.3	0.29	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	ND	U	3.3	0.45	1	12/17/04	01/08/05	KWG0419967	
Pyrene	ND	U	3.3	0.47	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	ND	U	3.3	0.21	1	12/17/04	01/08/05	KWG0419967	
Chrysene	ND	U	3.3	0.54	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	ND	U	3.3	0.63	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	ND	U	3.3	0.44	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	ND	U	3.3	0.29	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	ND	U	3.3	0.32	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	3.3	0.34	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	ND	U	3.3	0.30	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	45	27-110	01/08/05	Acceptable
Fluoranthene-d10	55	34-122	01/08/05	Acceptable
Terphenyl-d14	76	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-3
Lab Code: K2409889-003

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.7**	J	3.3	0.45	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**0.67**	J	3.3	0.45	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**0.44**	J	3.3	0.33	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	ND	U	3.3	0.29	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	3.3	0.21	1	12/17/04	01/08/05	KWG0419967	
Fluorene	**0.27**	J	3.3	0.25	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	**0.58**	J	3.3	0.43	1	12/17/04	01/08/05	KWG0419967	
Anthracene	**0.40**	J	3.3	0.29	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	ND	U	3.3	0.45	1	12/17/04	01/08/05	KWG0419967	
Pyrene	ND	U	3.3	0.47	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	ND	U	3.3	0.21	1	12/17/04	01/08/05	KWG0419967	
Chrysene	ND	U	3.3	0.54	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	ND	U	3.3	0.63	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	ND	U	3.3	0.43	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	ND	U	3.3	0.29	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	ND	U	3.3	0.32	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	3.3	0.34	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	ND	U	3.3	0.30	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	50	27-110	01/08/05	Acceptable
Fluoranthene-d10	58	34-122	01/08/05	Acceptable
Terphenyl-d14	78	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/09/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-4
Lab Code: K2409889-004

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.6**	J	3.7	0.50	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**0.52**	J	3.7	0.50	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	ND	U	3.7	0.37	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	ND	U	3.7	0.32	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	3.7	0.24	1	12/17/04	01/08/05	KWG0419967	
Fluorene	ND	U	3.7	0.28	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	ND	U	3.7	0.48	1	12/17/04	01/08/05	KWG0419967	
Anthracene	ND	U	3.7	0.32	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	ND	U	3.7	0.50	1	12/17/04	01/08/05	KWG0419967	
Pyrene	ND	U	3.7	0.53	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	ND	U	3.7	0.24	1	12/17/04	01/08/05	KWG0419967	
Chrysene	ND	U	3.7	0.60	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	ND	U	3.7	0.70	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	ND	U	3.7	0.48	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	ND	U	3.7	0.32	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	ND	U	3.7	0.35	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	3.7	0.38	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	ND	U	3.7	0.34	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	37	27-110	01/08/05	Acceptable
Fluoranthene-d10	43	34-122	01/08/05	Acceptable
Terphenyl-d14	71	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-5
Lab Code: K2409889-005

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**6.9**		5.6	0.75	1	12/17/04	01/05/05	KWG0419967	
2-Methylnaphthalene	**1.6**	J	5.6	0.75	1	12/17/04	01/05/05	KWG0419967	
1-Methylnaphthalene	**0.83**	J	5.6	0.56	1	12/17/04	01/05/05	KWG0419967	
Acenaphthylene	**1.8**	J	5.6	0.49	1	12/17/04	01/05/05	KWG0419967	
Acenaphthene	**0.36**	J	5.6	0.36	1	12/17/04	01/05/05	KWG0419967	
Fluorene	**0.51**	J	5.6	0.42	1	12/17/04	01/05/05	KWG0419967	
Phenanthrene	**2.0**	J	5.6	0.73	1	12/17/04	01/05/05	KWG0419967	
Anthracene	**1.9**	J	5.6	0.49	1	12/17/04	01/05/05	KWG0419967	
Fluoranthene	**13**		5.6	0.75	1	12/17/04	01/05/05	KWG0419967	
Pyrene	**14**		5.6	0.80	1	12/17/04	01/05/05	KWG0419967	
Benz(a)anthracene	**10**		5.6	0.36	1	12/17/04	01/05/05	KWG0419967	
Chrysene	**9.8**		5.6	0.91	1	12/17/04	01/05/05	KWG0419967	
Benzo(b)fluoranthene	**14**		5.6	1.1	1	12/17/04	01/05/05	KWG0419967	
Benzo(k)fluoranthene	**4.8**	J	5.6	0.73	1	12/17/04	01/05/05	KWG0419967	
Benzo(a)pyrene	**9.4**		5.6	0.49	1	12/17/04	01/05/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	**3.8**	J	5.6	0.53	1	12/17/04	01/05/05	KWG0419967	
Dibenz(a,h)anthracene	**1.2**	J	5.6	0.58	1	12/17/04	01/05/05	KWG0419967	
Benzo(g,h,i)perylene	**4.1**	J	5.6	0.51	1	12/17/04	01/05/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	35	27-110	01/05/05	Acceptable
Fluoranthene-d10	35	34-122	01/05/05	Acceptable
Terphenyl-d14	70	50-132	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-5 dupe
Lab Code: K2409889-006

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**4.5**	J	5.2	0.71	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**1.2**	J	5.2	0.71	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**0.83**	J	5.2	0.52	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	**0.49**	J	5.2	0.46	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	**0.37**	J	5.2	0.33	1	12/17/04	01/08/05	KWG0419967	
Fluorene	**0.72**	J	5.2	0.40	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	**2.5**	J	5.2	0.69	1	12/17/04	01/08/05	KWG0419967	
Anthracene	**0.87**	J	5.2	0.46	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	**3.1**	J	5.2	0.71	1	12/17/04	01/08/05	KWG0419967	
Pyrene	**2.7**	J	5.2	0.75	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	**1.7**	J	5.2	0.33	1	12/17/04	01/08/05	KWG0419967	
Chrysene	**2.1**	J	5.2	0.85	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	**2.5**	J	5.2	0.99	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	**0.75**	J	5.2	0.69	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	**1.9**	J	5.2	0.46	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	**2.0**	J	5.2	0.50	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	5.2	0.54	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	**1.7**	J	5.2	0.48	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	39	27-110	01/08/05	Acceptable
Fluoranthene-d10	36	34-122	01/08/05	Acceptable
Terphenyl-d14	79	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-6
Lab Code: K2409889-007

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**8.0**	J	9.1	1.3	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**1.7**	J	9.1	1.3	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**1.3**	J	9.1	0.91	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	**1.8**	J	9.1	0.80	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	9.1	0.59	1	12/17/04	01/08/05	KWG0419967	
Fluorene	**0.80**	J	9.1	0.70	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	**2.0**	J	9.1	1.2	1	12/17/04	01/08/05	KWG0419967	
Anthracene	**1.8**	J	9.1	0.80	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	**5.0**	J	9.1	1.3	1	12/17/04	01/08/05	KWG0419967	
Pyrene	**4.3**	J	9.1	1.4	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	**2.6**	J	9.1	0.59	1	12/17/04	01/08/05	KWG0419967	
Chrysene	**2.0**	J	9.1	1.5	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	**6.1**	J	9.1	1.8	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	**1.3**	J	9.1	1.2	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	**3.8**	J	9.1	0.80	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	**3.2**	J	9.1	0.88	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	**0.98**	J	9.1	0.95	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	**3.7**	J	9.1	0.84	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	34	27-110	01/08/05	Acceptable
Fluoranthene-d10	35	34-122	01/08/05	Acceptable
Terphenyl-d14	70	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-7
Lab Code: K2409889-008

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**9.0**		7.2	0.97	1	12/17/04	01/05/05	KWG0419967	
2-Methylnaphthalene	**2.3**	J	7.2	0.97	1	12/17/04	01/05/05	KWG0419967	
1-Methylnaphthalene	**1.5**	J	7.2	0.72	1	12/17/04	01/05/05	KWG0419967	
Acenaphthylene	**2.8**	J	7.2	0.63	1	12/17/04	01/05/05	KWG0419967	
Acenaphthene	**0.88**	J	7.2	0.46	1	12/17/04	01/05/05	KWG0419967	
Fluorene	**1.5**	J	7.2	0.54	1	12/17/04	01/05/05	KWG0419967	
Phenanthrene	**3.9**	J	7.2	0.94	1	12/17/04	01/05/05	KWG0419967	
Anthracene	**4.7**	J	7.2	0.63	1	12/17/04	01/05/05	KWG0419967	
Fluoranthene	**5.5**	J	7.2	0.97	1	12/17/04	01/05/05	KWG0419967	
Pyrene	**4.6**	J	7.2	1.1	1	12/17/04	01/05/05	KWG0419967	
Benz(a)anthracene	**5.5**	J	7.2	0.46	1	12/17/04	01/05/05	KWG0419967	
Chrysene	**12**		7.2	1.2	1	12/17/04	01/05/05	KWG0419967	
Benzo(b)fluoranthene	**10**		7.2	1.4	1	12/17/04	01/05/05	KWG0419967	
Benzo(k)fluoranthene	**4.0**	J	7.2	0.94	1	12/17/04	01/05/05	KWG0419967	
Benzo(a)pyrene	**5.6**	J	7.2	0.63	1	12/17/04	01/05/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	**2.3**	J	7.2	0.69	1	12/17/04	01/05/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	7.2	0.74	1	12/17/04	01/05/05	KWG0419967	
Benzo(g,h,i)perylene	**2.8**	J	7.2	0.66	1	12/17/04	01/05/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	46	27-110	01/05/05	Acceptable
Fluoranthene-d10	46	34-122	01/05/05	Acceptable
Terphenyl-d14	79	50-132	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-8
Lab Code: K2409889-009

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**6.5**	J	6.9	0.94	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**1.5**	J	6.9	0.94	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**0.95**	J	6.9	0.69	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	**1.3**	J	6.9	0.61	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	6.9	0.44	1	12/17/04	01/08/05	KWG0419967	
Fluorene	**0.66**	J	6.9	0.53	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	**2.2**	J	6.9	0.91	1	12/17/04	01/08/05	KWG0419967	
Anthracene	**5.5**	J	6.9	0.61	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	**4.4**	J	6.9	0.94	1	12/17/04	01/08/05	KWG0419967	
Pyrene	**4.3**	J	6.9	0.99	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	**4.3**	J	6.9	0.44	1	12/17/04	01/08/05	KWG0419967	
Chrysene	**13**		6.9	1.2	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	**6.3**	J	6.9	1.4	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	**2.2**	J	6.9	0.91	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	**3.9**	J	6.9	0.61	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	**3.1**	J	6.9	0.66	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	**1.1**	J	6.9	0.72	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	**3.1**	J	6.9	0.64	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	32	27-110	01/08/05	Acceptable
Fluoranthene-d10	27	34-122	01/08/05	Outside Control Limits
Terphenyl-d14	75	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: 12/08/2004
Date Received: 12/15/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: RS-KB04
Lab Code: K2409889-010

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.3**	J	3.4	0.46	1	12/17/04	01/08/05	KWG0419967	
2-Methylnaphthalene	**0.59**	J	3.4	0.46	1	12/17/04	01/08/05	KWG0419967	
1-Methylnaphthalene	**0.37**	J	3.4	0.34	1	12/17/04	01/08/05	KWG0419967	
Acenaphthylene	ND	U	3.4	0.30	1	12/17/04	01/08/05	KWG0419967	
Acenaphthene	ND	U	3.4	0.22	1	12/17/04	01/08/05	KWG0419967	
Fluorene	ND	U	3.4	0.26	1	12/17/04	01/08/05	KWG0419967	
Phenanthrene	ND	U	3.4	0.45	1	12/17/04	01/08/05	KWG0419967	
Anthracene	ND	U	3.4	0.30	1	12/17/04	01/08/05	KWG0419967	
Fluoranthene	**0.51**	J	3.4	0.46	1	12/17/04	01/08/05	KWG0419967	
Pyrene	**0.53**	J	3.4	0.49	1	12/17/04	01/08/05	KWG0419967	
Benz(a)anthracene	**0.50**	J	3.4	0.22	1	12/17/04	01/08/05	KWG0419967	
Chrysene	ND	U	3.4	0.56	1	12/17/04	01/08/05	KWG0419967	
Benzo(b)fluoranthene	ND	U	3.4	0.65	1	12/17/04	01/08/05	KWG0419967	
Benzo(k)fluoranthene	ND	U	3.4	0.45	1	12/17/04	01/08/05	KWG0419967	
Benzo(a)pyrene	ND	U	3.4	0.30	1	12/17/04	01/08/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	ND	U	3.4	0.33	1	12/17/04	01/08/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	3.4	0.36	1	12/17/04	01/08/05	KWG0419967	
Benzo(g,h,i)perylene	ND	U	3.4	0.32	1	12/17/04	01/08/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	45	27-110	01/08/05	Acceptable
Fluoranthene-d10	51	34-122	01/08/05	Acceptable
Terphenyl-d14	75	50-132	01/08/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0419967-7

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.1**	J	2.5	0.34	1	12/17/04	01/05/05	KWG0419967	
2-Methylnaphthalene	**0.38**	J	2.5	0.34	1	12/17/04	01/05/05	KWG0419967	
1-Methylnaphthalene	**0.27**	J	2.5	0.25	1	12/17/04	01/05/05	KWG0419967	
Acenaphthylene	ND	U	2.5	0.22	1	12/17/04	01/05/05	KWG0419967	
Acenaphthene	ND	U	2.5	0.16	1	12/17/04	01/05/05	KWG0419967	
Fluorene	ND	U	2.5	0.19	1	12/17/04	01/05/05	KWG0419967	
Phenanthrene	ND	U	2.5	0.33	1	12/17/04	01/05/05	KWG0419967	
Anthracene	ND	U	2.5	0.22	1	12/17/04	01/05/05	KWG0419967	
Fluoranthene	ND	U	2.5	0.34	1	12/17/04	01/05/05	KWG0419967	
Pyrene	ND	U	2.5	0.36	1	12/17/04	01/05/05	KWG0419967	
Benz(a)anthracene	ND	U	2.5	0.16	1	12/17/04	01/05/05	KWG0419967	
Chrysene	ND	U	2.5	0.41	1	12/17/04	01/05/05	KWG0419967	
Benzo(b)fluoranthene	ND	U	2.5	0.48	1	12/17/04	01/05/05	KWG0419967	
Benzo(k)fluoranthene	ND	U	2.5	0.33	1	12/17/04	01/05/05	KWG0419967	
Benzo(a)pyrene	ND	U	2.5	0.22	1	12/17/04	01/05/05	KWG0419967	
Indeno(1,2,3-cd)pyrene	ND	U	2.5	0.24	1	12/17/04	01/05/05	KWG0419967	
Dibenz(a,h)anthracene	ND	U	2.5	0.26	1	12/17/04	01/05/05	KWG0419967	
Benzo(g,h,i)perylene	ND	U	2.5	0.23	1	12/17/04	01/05/05	KWG0419967	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	27-110	01/05/05	Acceptable
Fluoranthene-d10	74	34-122	01/05/05	Acceptable
Terphenyl-d14	100	50-132	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/17/2004
Date Analyzed: 01/05/2005

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-5
Lab Code: K2409889-005

Units: ug/Kg
Basis: Dry

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0419967

Analyte Name	Sample Result	E-KB04-5MS KWG0419967-3 Matrix Spike				E-KB04-5DMS KWG0419967-4 Duplicate Matrix Spike				%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec		Result	Expected	%Rec				
Naphthalene	6.9	258	549	46		226	549	40		22-111	13	40
2-Methylnaphthalene	1.6	204	549	37		183	549	33		28-117	11	40
1-Methylnaphthalene	0.83	201	549	36	*	185	549	34	*	43-98	8	40
Acenaphthylene	1.8	208	549	38		191	549	34		30-117	9	40
Acenaphthene	0.36	189	549	34		172	549	31		22-128	9	40
Fluorene	0.51	176	549	32		154	549	28	*	31-123	13	40
Phenanthrene	2.0	187	549	34		155	549	28	*	29-126	18	40
Anthracene	1.9	199	549	36	*	174	549	31	*	37-122	14	40
Fluoranthene	13	204	549	35		148	549	24	*	31-134	32	40
Pyrene	14	202	549	34		152	549	25		21-144	28	40
Benz(a)anthracene	10	205	549	36		177	549	30		22-138	15	40
Chrysene	9.8	241	549	42		219	549	38		26-136	9	40
Benzo(b)fluoranthene	14	213	549	36		169	549	28		28-134	23	40
Benzo(k)fluoranthene	4.8	219	549	39		199	549	35		20-145	10	40
Benzo(a)pyrene	9.4	207	549	36		182	549	32		18-145	13	40
Indeno(1,2,3-cd)pyrene	3.8	131	549	23		137	549	24		14-149	4	40
Dibenz(a,h)anthracene	1.2	136	549	25		157	549	28		17-141	14	40
Benzo(g,h,i)perylene	4.1	144	549	26		157	549	28		21-137	8	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: USACE King's Bay 2004
Sample Matrix: Sediment

Service Request: K2409889
Date Extracted: 12/17/2004
Date Analyzed: 01/05/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0419967

	Lab Control Sample KWG0419967-5 Lab Control Spike			Duplicate Lab Control Sample KWG0419967-6 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	398	500	80	412	500	82	51-102	3	40
2-Methylnaphthalene	414	500	83	416	500	83	49-115	1	40
1-Methylnaphthalene	404	500	81	407	500	81	45-118	1	40
Acenaphthylene	408	500	82	432	500	86	53-110	6	40
Acenaphthene	402	500	80	426	500	85	54-107	6	40
Fluorene	397	500	79	417	500	83	56-109	5	40
Phenanthrene	403	500	81	423	500	85	58-111	5	40
Anthracene	420	500	84	432	500	86	59-113	3	40
Fluoranthene	424	500	85	442	500	88	62-119	4	40
Pyrene	416	500	83	431	500	86	54-133	4	40
Benz(a)anthracene	425	500	85	426	500	85	58-119	0	40
Chrysene	427	500	85	439	500	88	63-119	3	40
Benzo(b)fluoranthene	451	500	90	468	500	94	59-125	4	40
Benzo(k)fluoranthene	441	500	88	455	500	91	63-126	3	40
Benzo(a)pyrene	441	500	88	449	500	90	59-123	2	40
Indeno(1,2,3-cd)pyrene	404	500	81	374	500	75	48-132	8	40
Dibenz(a,h)anthracene	401	500	80	356	500	71	46-129	12	40
Benzo(g,h,i)perylene	380	500	76	360	500	72	49-129	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Polychlorinated Biphenyls
PCB's
EPA Method 8082

Organic Analysis:
Congener Specific PCBs

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Cover Page - Organic Analysis Data Package
Congener Specific PCBs

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1-Elutriate	K2409983-001	12/15/2004	12/17/2004
E-KB04-2-Elutriate	K2409983-002	12/15/2004	12/17/2004
E-KB04-3-Elutriate	K2409983-003	12/15/2004	12/17/2004
E-KB04-4-Elutriate	K2409983-004	12/15/2004	12/17/2004
E-KB04-5-Elutriate	K2409983-005	12/15/2004	12/17/2004
E-KB04-5-Dupe-Elutriate	K2409983-006	12/15/2004	12/17/2004
E-KB04-6-Elutriate	K2409983-007	12/16/2004	12/17/2004
E-KB04-7-Elutriate	K2409983-008	12/16/2004	12/17/2004
E-KB04-8-Elutriate	K2409983-009	12/16/2004	12/17/2004
RS-KB04-Elutriate	K2409983-010	12/16/2004	12/17/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Todd Rychlin

Date: 2/2/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-1-Elutriate
Lab Code: K2409983-001

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.0	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.0	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.0	2.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.0	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.0	0.51	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.0	0.26	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.0	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.0	0.39	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.0	0.89	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.0	0.33	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	72	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-2-Elutriate
Lab Code: K2409983-002

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.0	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.0	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.0	2.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.0	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.0	0.51	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.0	0.26	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.0	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.0	0.39	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.0	0.89	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.0	0.33	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	82	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-3-Elutriate
Lab Code: K2409983-003

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.0	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.0	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	Ui	5.0	5.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.0	2.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.0	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.0	0.51	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.0	0.26	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.0	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.0	0.39	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.0	0.89	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.0	0.33	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	17	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	81	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	80	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-5-Dupe-Elutriate
Lab Code: K2409983-006

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	89	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-6-Elutriate
Lab Code: K2409983-007

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	82	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-7-Elutriate
Lab Code: K2409983-008

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	68	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: E-KB04-8-Elutriate
Lab Code: K2409983-009

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	Ui	52	52	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	78	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Congener Specific PCBs

Sample Name: RS-KB04-Elutriate
Lab Code: K2409983-010

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	Ui	5.1	5.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.1	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.1	2.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.1	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.1	2.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.1	2.0	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.1	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.1	1.6	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.1	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.1	0.52	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.1	0.27	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.1	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.1	0.35	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.1	0.40	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.1	0.90	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.1	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.1	0.41	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	88	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: NA
Date Received: NA

Congener Specific PCBs

Sample Name: Method Blank
Lab Code: KWG0420288-5

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 18	ND	U	5.0	2.0	1	12/22/04	01/05/05	KWG0420288	*
PCB 28	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 44	ND	U	5.0	2.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 52	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 66	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 87	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 101	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	*
PCB 138	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 156	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 180	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 183	ND	U	5.0	1.3	1	12/22/04	01/05/05	KWG0420288	*
PCB 184	ND	U	5.0	2.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 187	ND	U	5.0	1.9	1	12/22/04	01/05/05	KWG0420288	
PCB 195	ND	U	5.0	1.2	1	12/22/04	01/05/05	KWG0420288	*
PCB 206	ND	U	5.0	1.5	1	12/22/04	01/05/05	KWG0420288	*
PCB 209	ND	U	5.0	2.1	1	12/22/04	01/05/05	KWG0420288	*
PCB 49	ND	U	5.0	0.51	1	12/22/04	01/05/05	KWG0420288	
PCB 77	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*
PCB 105	ND	U	5.0	0.26	1	12/22/04	01/05/05	KWG0420288	*
PCB 118	ND	U	5.0	1.4	1	12/22/04	01/05/05	KWG0420288	*
PCB 126	ND	U	5.0	0.34	1	12/22/04	01/05/05	KWG0420288	*
PCB 128	ND	U	5.0	0.39	1	12/22/04	01/05/05	KWG0420288	
PCB 153	ND	U	5.0	0.89	1	12/22/04	01/05/05	KWG0420288	*
PCB 169	ND	U	5.0	0.33	1	12/22/04	01/05/05	KWG0420288	*
PCB 170	ND	U	5.0	0.40	1	12/22/04	01/05/05	KWG0420288	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	63	10-147	01/05/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Extracted: 12/22/2004
Date Analyzed: 01/05/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Congener Specific PCBs

Extraction Method: EPA 3520C
Analysis Method: 8082

Units: ng/L
Basis: NA
Level: Low
Extraction Lot: KWG0420288

	Lab Control Sample KWG0420288-1 Lab Control Spike			Duplicate Lab Control Sample KWG0420288-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
PCB 8	134	100	134 *	235E	100	235 *	70-130	55 *	30
PCB 18	110	100	110	194	100	194 *	70-130	55 *	30
PCB 28	147	100	147 *	265E	100	265 *	70-130	57 *	30
PCB 44	123	100	123	212E	100	212 *	70-130	53 *	30
PCB 52	107	100	107	186	100	186 *	70-130	54 *	30
PCB 66	112	100	112	193	100	193 *	70-130	53 *	30
PCB 87	114	100	114	196	100	196 *	70-130	53 *	30
PCB 101	131	100	131 *	229E	100	229 *	70-130	54 *	30
PCB 138	109	100	109	190	100	190 *	70-130	54 *	30
PCB 156	133	100	133 *	232E	100	232 *	70-130	54 *	30
PCB 180	132	100	132 *	228E	100	228 *	70-130	54 *	30
PCB 183	118	100	118	203E	100	203 *	70-130	52 *	30
PCB 184	119	100	119	204E	100	204 *	70-130	53 *	30
PCB 195	130	100	130	225E	100	225 *	70-130	53 *	30
PCB 206	121	100	121	205E	100	205 *	70-130	51 *	30
PCB 209	117	100	117	198	100	198 *	70-130	51 *	30
PCB 77	105	100	105	179	100	179 *	70-130	52 *	30
PCB 105	121	100	121	207E	100	207 *	70-130	53 *	30
PCB 118	139	100	139 *	282E	100	282 *	70-130	68 *	30
PCB 126	106	100	106	180	100	180 *	70-130	52 *	30
PCB 153	107	100	107	181	100	181 *	70-130	51 *	30
PCB 169	121	100	121	207E	100	207 *	70-130	52 *	30
PCB 170	119	100	119	206E	100	206 *	70-130	53 *	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Polynuclear Aromatic Hydrocarbons
EPA Method 8270C

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-1-Elutriate	K2409983-001	12/15/2004	12/17/2004
E-KB04-2-Elutriate	K2409983-002	12/15/2004	12/17/2004
E-KB04-3-Elutriate	K2409983-003	12/15/2004	12/17/2004
E-KB04-4-Elutriate	K2409983-004	12/15/2004	12/17/2004
E-KB04-5-Elutriate	K2409983-005	12/15/2004	12/17/2004
E-KB04-5-Dupe-Elutriate	K2409983-006	12/15/2004	12/17/2004
E-KB04-6-Elutriate	K2409983-007	12/16/2004	12/17/2004
E-KB04-7-Elutriate	K2409983-008	12/16/2004	12/17/2004
E-KB04-8-Elutriate	K2409983-009	12/16/2004	12/17/2004
RS-KB04-Elutriate	K2409983-010	12/16/2004	12/17/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature]

Name: Carl Degner

Date: 1/7/05

Title: SVM Supervisor

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-1-Elutriate
Lab Code: K2409983-001

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.016**	J	0.020	0.0048	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	ND	U	0.020	0.0037	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	**0.0045**	J	0.020	0.0040	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.020	0.0031	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.020	0.0042	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.020	0.0051	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.020	0.0038	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.020	0.0039	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.020	0.0042	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.020	0.0037	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.020	0.0040	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.020	0.0036	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.020	0.0048	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.020	0.0041	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.020	0.0041	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0038	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.020	0.0066	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.020	0.0041	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	67	37-107	12/30/04	Acceptable
Fluoranthene-d10	70	18-137	12/30/04	Acceptable
Terphenyl-d14	94	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-2-Elutriate
Lab Code: K2409983-002

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.012**	J	0.020	0.0048	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0040**	J	0.020	0.0037	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	**0.0043**	J	0.020	0.0040	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.020	0.0031	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.020	0.0042	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.020	0.0051	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.020	0.0038	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.020	0.0039	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.020	0.0042	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.020	0.0037	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.020	0.0040	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.020	0.0036	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.020	0.0048	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.020	0.0041	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.020	0.0041	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0038	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.020	0.0066	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.020	0.0041	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	61	37-107	12/30/04	Acceptable
Fluoranthene-d10	67	18-137	12/30/04	Acceptable
Terphenyl-d14	85	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-3-Elutriate
Lab Code: K2409983-003

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.016**	J	0.021	0.0049	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	**0.0043**	J	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.021	0.0032	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.021	0.0053	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.021	0.0037	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.021	0.0049	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.021	0.0068	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	79	37-107	12/30/04	Acceptable
Fluoranthene-d10	81	18-137	12/30/04	Acceptable
Terphenyl-d14	102	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-4-Elutriate
Lab Code: K2409983-004

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.017**	J	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0040**	J	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	**0.0046**	J	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.021	0.0033	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.021	0.0054	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.021	0.0069	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	75	37-107	12/30/04	Acceptable
Fluoranthene-d10	75	18-137	12/30/04	Acceptable
Terphenyl-d14	95	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-5-Elutriate
Lab Code: K2409983-005

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.012**	J	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0047**	J	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.021	0.0033	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.021	0.0054	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.021	0.0069	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	37-107	12/30/04	Acceptable
Fluoranthene-d10	65	18-137	12/30/04	Acceptable
Terphenyl-d14	87	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/15/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-5-Dupe-Elutriate
Lab Code: K2409983-006

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.013**	J	0.022	0.0051	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0049**	J	0.022	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	ND	U	0.022	0.0043	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.022	0.0033	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.022	0.0045	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.022	0.0054	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.022	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.022	0.0042	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.022	0.0045	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.022	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.022	0.0043	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.022	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.022	0.0051	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.022	0.0044	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.022	0.0044	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.022	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.022	0.0070	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.022	0.0044	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	75	37-107	12/30/04	Acceptable
Fluoranthene-d10	76	18-137	12/30/04	Acceptable
Terphenyl-d14	98	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-6-Elutriate
Lab Code: K2409983-007

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.012**	J	0.022	0.0051	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0043**	J	0.022	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	**0.0048**	J	0.022	0.0043	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.022	0.0033	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.022	0.0045	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.022	0.0054	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.022	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.022	0.0042	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.022	0.0045	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.022	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.022	0.0043	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.022	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.022	0.0051	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.022	0.0044	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.022	0.0044	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.022	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.022	0.0070	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.022	0.0044	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	78	37-107	12/30/04	Acceptable
Fluoranthene-d10	77	18-137	12/30/04	Acceptable
Terphenyl-d14	97	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-7-Elutriate
Lab Code: K2409983-008

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.015**	J	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0054**	J	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	**0.0062**	J	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.021	0.0032	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.021	0.0053	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	**0.0044**	J	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.021	0.0069	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	75	37-107	12/30/04	Acceptable
Fluoranthene-d10	73	18-137	12/30/04	Acceptable
Terphenyl-d14	97	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-8-Elutriate
Lab Code: K2409983-009

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.011**	J	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	**0.0041**	J	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.021	0.0033	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.021	0.0054	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.021	0.0069	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	37-107	12/30/04	Acceptable
Fluoranthene-d10	65	18-137	12/30/04	Acceptable
Terphenyl-d14	92	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: RS-KB04-Elutriate
Lab Code: K2409983-010

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.012**	J	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	*
1-Methylnaphthalene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
2-Methylnaphthalene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Acenaphthylene	ND	U	0.021	0.0032	1	12/20/04	12/30/04	KWG0420082	
Acenaphthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Fluorene	ND	U	0.021	0.0053	1	12/20/04	12/30/04	KWG0420082	
Phenanthrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	*
Anthracene	ND	U	0.021	0.0041	1	12/20/04	12/30/04	KWG0420082	
Fluoranthene	ND	U	0.021	0.0044	1	12/20/04	12/30/04	KWG0420082	
Pyrene	ND	U	0.021	0.0039	1	12/20/04	12/30/04	KWG0420082	
Benz(a)anthracene	ND	U	0.021	0.0042	1	12/20/04	12/30/04	KWG0420082	
Chrysene	ND	U	0.021	0.0038	1	12/20/04	12/30/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.021	0.0050	1	12/20/04	12/30/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0040	1	12/20/04	12/30/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.021	0.0069	1	12/20/04	12/30/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.021	0.0043	1	12/20/04	12/30/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	37-107	12/30/04	Acceptable
Fluoranthene-d10	63	18-137	12/30/04	Acceptable
Terphenyl-d14	80	18-153	12/30/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0420082-3

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.0071**	J	0.020	0.0048	1	12/20/04	12/29/04	KWG0420082	*
1-Methylnaphthalene	ND	U	0.020	0.0037	1	12/20/04	12/29/04	KWG0420082	
2-Methylnaphthalene	ND	U	0.020	0.0040	1	12/20/04	12/29/04	KWG0420082	
Acenaphthylene	ND	U	0.020	0.0031	1	12/20/04	12/29/04	KWG0420082	
Acenaphthene	ND	U	0.020	0.0042	1	12/20/04	12/29/04	KWG0420082	
Fluorene	ND	U	0.020	0.0051	1	12/20/04	12/29/04	KWG0420082	
Phenanthrene	ND	U	0.020	0.0038	1	12/20/04	12/29/04	KWG0420082	*
Anthracene	ND	U	0.020	0.0039	1	12/20/04	12/29/04	KWG0420082	
Fluoranthene	ND	U	0.020	0.0042	1	12/20/04	12/29/04	KWG0420082	
Pyrene	ND	U	0.020	0.0037	1	12/20/04	12/29/04	KWG0420082	
Benz(a)anthracene	ND	U	0.020	0.0040	1	12/20/04	12/29/04	KWG0420082	
Chrysene	ND	U	0.020	0.0036	1	12/20/04	12/29/04	KWG0420082	
Benzo(b)fluoranthene	ND	U	0.020	0.0048	1	12/20/04	12/29/04	KWG0420082	
Benzo(k)fluoranthene	ND	U	0.020	0.0041	1	12/20/04	12/29/04	KWG0420082	
Benzo(a)pyrene	ND	U	0.020	0.0041	1	12/20/04	12/29/04	KWG0420082	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0038	1	12/20/04	12/29/04	KWG0420082	
Dibenz(a,h)anthracene	ND	U	0.020	0.0066	1	12/20/04	12/29/04	KWG0420082	
Benzo(g,h,i)perylene	ND	U	0.020	0.0041	1	12/20/04	12/29/04	KWG0420082	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	77	37-107	12/29/04	Acceptable
Fluoranthene-d10	76	18-137	12/29/04	Acceptable
Terphenyl-d14	90	18-153	12/29/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/29/2004
Time Analyzed: 11:10

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\122904\1229F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0500141-2
Analysis Lot: KWG0500141

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	146,381	4.98	98,721	6.40	168,661	7.64
	Upper Limit ==>	292,762	5.48	197,442	6.90	337,322	8.14
	Lower Limit ==>	73,191	4.48	49,361	5.90	84,331	7.14
	ICAL Result ==>	180,958	4.97	125,060	6.40	199,418	7.64
Associated Analyses							
Method Blank	KWG0420082-3	163,526	4.97	101,454	6.40	161,729	7.64

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/29/2004
Time Analyzed: 11:10

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\122904\1229F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0500141-2
Analysis Lot: KWG0500141

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	154,881	10.47	152,094	14.29
	Upper Limit ==>	309,762	10.97	304,188	14.79
	Lower Limit ==>	77,441	9.97	76,047	13.79
	ICAL Result ==>	167,841	10.48	156,516	14.32
Associated Analyses					
Method Blank	KWG0420082-3	128,620	10.47	120,862	14.32

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/30/2004
Time Analyzed: 00:52

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\122904\1229F033.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0500165-2
Analysis Lot: KWG0500165

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	RT	Area	RT	Area	RT
	Results ==>	131,012	4.97	93,672	6.40	157,689	7.64
	Upper Limit ==>	262,024	5.47	187,344	6.90	315,378	8.14
	Lower Limit ==>	65,506	4.47	46,836	5.90	78,845	7.14
	ICAL Result ==>	180,958	4.97	125,060	6.40	199,418	7.64
Associated Analyses							
Lab Control Sample	KWG0420082-1	164,342	4.97	100,313	6.40	157,599	7.64
Duplicate Lab Control Sample	KWG0420082-2	162,103	4.97	98,502	6.40	158,520	7.64
E-KB04-1-Elutriate	K2409983-001	158,795	4.97	94,208	6.40	148,252	7.64
E-KB04-2-Elutriate	K2409983-002	151,602	4.97	91,180	6.40	143,542	7.64
E-KB04-3-Elutriate	K2409983-003	154,733	4.97	92,878	6.40	150,439	7.64
E-KB04-4-Elutriate	K2409983-004	146,088	4.97	88,506	6.40	149,102	7.64
E-KB04-5-Elutriate	K2409983-005	140,441	4.97	90,098	6.40	147,656	7.64
E-KB04-5-Dupe-Elutriate	K2409983-006	137,529	4.97	88,373	6.40	145,747	7.64
E-KB04-6-Elutriate	K2409983-007	142,123	4.97	91,288	6.40	155,093	7.64
E-KB04-7-Elutriate	K2409983-008	142,684	4.97	87,073	6.40	144,277	7.64
E-KB04-8-Elutriate	K2409983-009	136,188	4.97	86,824	6.39	148,452	7.64
RS-KB04-Elutriate	K2409983-010	146,886	4.97	94,018	6.40	156,145	7.64

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/30/2004
Time Analyzed: 00:52

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\122904\1229F033.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0500165-2
Analysis Lot: KWG0500165

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	145,338	10.47	144,508	14.31
	Upper Limit ==>	290,676	10.97	289,016	14.81
	Lower Limit ==>	72,669	9.97	72,254	13.81
	ICAL Result ==>	167,841	10.48	156,516	14.32
Associated Analyses					
Lab Control Sample	KWG0420082-1	149,767	10.47	148,355	14.31
Duplicate Lab Control Sample	KWG0420082-2	147,038	10.47	144,913	14.31
E-KB04-1-Elutriate	K2409983-001	119,814	10.47	120,409	14.32
E-KB04-2-Elutriate	K2409983-002	126,303	10.47	126,674	14.33
E-KB04-3-Elutriate	K2409983-003	125,157	10.47	125,141	14.32
E-KB04-4-Elutriate	K2409983-004	124,408	10.47	129,257	14.31
E-KB04-5-Elutriate	K2409983-005	123,591	10.47	124,777	14.31
E-KB04-5-Dupe-Elutriate	K2409983-006	122,248	10.47	116,339	14.31
E-KB04-6-Elutriate	K2409983-007	128,317	10.47	131,914	14.31
E-KB04-7-Elutriate	K2409983-008	116,266	10.47	118,151	14.31
E-KB04-8-Elutriate	K2409983-009	125,823	10.46	127,714	14.31
RS-KB04-Elutriate	K2409983-010	132,990	10.46	138,025	14.31

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Extracted: 12/20/2004
Date Analyzed: 12/30/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0420082

	Lab Control Sample KWG0420082-1 Lab Control Spike			Duplicate Lab Control Sample KWG0420082-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	2.55	2.50	102 *	2.47	2.50	99	44-101	3	30
1-Methylnaphthalene	2.39	2.50	96	2.32	2.50	93	37-110	3	30
2-Methylnaphthalene	2.40	2.50	96	2.35	2.50	94	36-106	2	30
Acenaphthylene	2.70	2.50	108	2.63	2.50	105	49-114	3	30
Acenaphthene	2.65	2.50	106	2.59	2.50	104	48-107	2	30
Fluorene	2.69	2.50	108	2.58	2.50	103	55-111	4	30
Phenanthrene	2.72	2.50	109 *	2.58	2.50	103	56-108	5	30
Anthracene	2.80	2.50	112	2.61	2.50	104	42-117	7	30
Fluoranthene	2.93	2.50	117	2.68	2.50	107	61-123	9	30
Pyrene	2.66	2.50	106	2.56	2.50	102	53-123	4	30
Benz(a)anthracene	2.60	2.50	104	2.48	2.50	99	53-123	5	30
Chrysene	2.65	2.50	106	2.60	2.50	104	57-118	2	30
Benzo(b)fluoranthene	2.68	2.50	107	2.67	2.50	107	57-132	0	30
Benzo(k)fluoranthene	2.79	2.50	111	2.67	2.50	107	54-126	4	30
Benzo(a)pyrene	2.64	2.50	105	2.61	2.50	104	38-142	1	30
Indeno(1,2,3-cd)pyrene	2.61	2.50	104	2.39	2.50	96	49-139	9	30
Dibenz(a,h)anthracene	2.66	2.50	106	2.52	2.50	101	47-138	5	30
Benzo(g,h,i)perylene	2.66	2.50	107	2.52	2.50	101	50-125	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Extracted: 12/20/2004
Date Analyzed: 12/29/2004
Time Analyzed: 12:03

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0420082-3

File ID: J:\MS11\DATA\122904\1229F004.D
Instrument ID: MS11

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0420082

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0420082-1	J:\MS11\DATA\122904\1229F040.D	12/30/04	03:56
Duplicate Lab Control Sample	KWG0420082-2	J:\MS11\DATA\122904\1229F041.D	12/30/04	04:22
E-KB04-1-Elutriate	K2409983-001	J:\MS11\DATA\122904\1229F042.D	12/30/04	04:49
E-KB04-2-Elutriate	K2409983-002	J:\MS11\DATA\122904\1229F043.D	12/30/04	05:15
E-KB04-3-Elutriate	K2409983-003	J:\MS11\DATA\122904\1229F044.D	12/30/04	05:41
E-KB04-4-Elutriate	K2409983-004	J:\MS11\DATA\122904\1229F045.D	12/30/04	06:07
E-KB04-5-Elutriate	K2409983-005	J:\MS11\DATA\122904\1229F046.D	12/30/04	06:34
E-KB04-5-Dupe-Elutriate	K2409983-006	J:\MS11\DATA\122904\1229F047.D	12/30/04	07:00
E-KB04-6-Elutriate	K2409983-007	J:\MS11\DATA\122904\1229F048.D	12/30/04	07:27
E-KB04-7-Elutriate	K2409983-008	J:\MS11\DATA\122904\1229F049.D	12/30/04	07:53
E-KB04-8-Elutriate	K2409983-009	J:\MS11\DATA\122904\1229F050.D	12/30/04	08:20
RS-KB04-Elutriate	K2409983-010	J:\MS11\DATA\122904\1229F051.D	12/30/04	08:46

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	**Sample Name:**	Duplicate Lab Control Sample
Lab Code:	KWG0420082-1	**Lab Code:**	KWG0420082-2
File ID:	J:\MS11\DATA\122904\1229F040.D	**File ID:**	J:\MS11\DATA\122904\1229F041.D
Instrument ID:	MS11	**Instrument ID:**	MS11
Date Extracted:	12/20/2004	**Date Extracted:**	12/20/2004
Date Analyzed:	12/30/2004	**Date Analyzed:**	12/30/2004
Time Analyzed:	03:56	**Time Analyzed:**	04:22

Extraction Method:	EPA 3535	**Level:**	Low
Analysis Method:	8270C SIM	**Extraction Lot:**	KWG0420082

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0420082-3	J:\MS11\DATA\122904\1229F004.D	12/29/04	12:03
E-KB04-1-Elutriate	K2409983-001	J:\MS11\DATA\122904\1229F042.D	12/30/04	04:49
E-KB04-2-Elutriate	K2409983-002	J:\MS11\DATA\122904\1229F043.D	12/30/04	05:15
E-KB04-3-Elutriate	K2409983-003	J:\MS11\DATA\122904\1229F044.D	12/30/04	05:41
E-KB04-4-Elutriate	K2409983-004	J:\MS11\DATA\122904\1229F045.D	12/30/04	06:07
E-KB04-5-Elutriate	K2409983-005	J:\MS11\DATA\122904\1229F046.D	12/30/04	06:34
E-KB04-5-Dupe-Elutriate	K2409983-006	J:\MS11\DATA\122904\1229F047.D	12/30/04	07:00
E-KB04-6-Elutriate	K2409983-007	J:\MS11\DATA\122904\1229F048.D	12/30/04	07:27
E-KB04-7-Elutriate	K2409983-008	J:\MS11\DATA\122904\1229F049.D	12/30/04	07:53
E-KB04-8-Elutriate	K2409983-009	J:\MS11\DATA\122904\1229F050.D	12/30/04	08:20
RS-KB04-Elutriate	K2409983-010	J:\MS11\DATA\122904\1229F051.D	12/30/04	08:46

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/29/2004
Time Analyzed: 10:53

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\122904\1229F001.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0500141

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	56.8	2786240	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	48.2	2365440	PASS
70	69	0	2	0.7	16828	PASS
127	198	10	80	58.7	2880000	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	99.7	4909568	PASS
199	198	5	9	7.8	382016	PASS
275	198	10	60	34.3	1685504	PASS
365	442	1	50	7.1	349504	PASS
441	443	0	100	73.2	797760	PASS
442	442	100	100	100.0	4925440	PASS
443	442	15	24	22.1	1090048	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0500141-2	J:\MS11\DATA\122904\1229F002.D	12/29/2004	11:10	
Method Blank	KWG0420082-3	J:\MS11\DATA\122904\1229F004.D	12/29/2004	12:03	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/30/2004
Time Analyzed: 00:25

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\122904\1229F032.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0500165

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	51.4	2932222	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	45.8	2610688	PASS
70	69	0	2	0.6	16848	PASS
127	198	10	80	57.5	3278848	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	96.8	5704192	PASS
199	198	5	9	8.0	454976	PASS
275	198	10	60	34.9	1992704	PASS
365	442	1	50	6.9	407808	PASS
441	443	0	100	73.6	982144	PASS
442	442	100	100	100.0	5895168	PASS
443	442	15	24	22.6	1334272	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0500165-2	J:\MS11\DATA\122904\1229F033.D	12/30/2004	00:52	
Lab Control Sample	KWG0420082-1	J:\MS11\DATA\122904\1229F040.D	12/30/2004	03:56	
Duplicate Lab Control Sample	KWG0420082-2	J:\MS11\DATA\122904\1229F041.D	12/30/2004	04:22	
E-KB04-1-Elutriate	K2409983-001	J:\MS11\DATA\122904\1229F042.D	12/30/2004	04:49	
E-KB04-2-Elutriate	K2409983-002	J:\MS11\DATA\122904\1229F043.D	12/30/2004	05:15	
E-KB04-3-Elutriate	K2409983-003	J:\MS11\DATA\122904\1229F044.D	12/30/2004	05:41	
E-KB04-4-Elutriate	K2409983-004	J:\MS11\DATA\122904\1229F045.D	12/30/2004	06:07	
E-KB04-5-Elutriate	K2409983-005	J:\MS11\DATA\122904\1229F046.D	12/30/2004	06:34	
E-KB04-5-Dupe-Elutriate	K2409983-006	J:\MS11\DATA\122904\1229F047.D	12/30/2004	07:00	
E-KB04-6-Elutriate	K2409983-007	J:\MS11\DATA\122904\1229F048.D	12/30/2004	07:27	
E-KB04-7-Elutriate	K2409983-008	J:\MS11\DATA\122904\1229F049.D	12/30/2004	07:53	
E-KB04-8-Elutriate	K2409983-009	J:\MS11\DATA\122904\1229F050.D	12/30/2004	08:20	
RS-KB04-Elutriate	K2409983-010	J:\MS11\DATA\122904\1229F051.D	12/30/2004	08:46	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Calibration Date: 12/10/2004

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL4064
Instrument ID: MS11

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS11\DATA\121004\1210F009.D	F	J:\MS11\DATA\121004\1210F015.D
B	J:\MS11\DATA\121004\1210F010.D	G	J:\MS11\DATA\121004\1210F016.D
C	J:\MS11\DATA\121004\1210F012.D	H	J:\MS11\DATA\121004\1210F017.D
D	J:\MS11\DATA\121004\1210F013.D	I	J:\MS11\DATA\121004\1210F018.D
E	J:\MS11\DATA\121004\1210F014.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	2.0	1.31	B	4.0	1.24	C	20	1.16	D	100	1.12	E	200	1.12
	F	400	1.13	G	1000	1.13	H	1600	1.17	I	2000	1.20			
1-Methylnaphthalene	A	2.0	0.830	B	4.0	0.738	C	20	0.746	D	100	0.753	E	200	0.775
	F	400	0.804	G	1000	0.854	H	1600	0.939	I	2000	0.951			
2-Methylnaphthalene	A	2.0	0.864	B	4.0	0.801	C	20	0.818	D	100	0.828	E	200	0.847
	F	400	0.891	G	1000	0.952	H	1600	1.06	I	2000	1.07			
Acenaphthylene	A	2.0	2.05	B	4.0	1.92	C	20	1.92	D	100	1.89	E	200	1.96
	F	400	2.03	G	1000	2.17	H	1600	2.35	I	2000	2.42			
Acenaphthene	A	2.0	1.10	B	4.0	1.18	C	20	1.18	D	100	1.17	E	200	1.20
	F	400	1.25	G	1000	1.33	H	1600	1.47	I	2000	1.55			
Fluorene	A	2.0	1.54	B	4.0	1.40	C	20	1.34	D	100	1.38	E	200	1.43
	F	400	1.51	G	1000	1.66	H	1600	1.83	I	2000	1.95			
Phenanthrene	A	2.0	1.36	B	4.0	1.28	C	20	1.19	D	100	1.22	E	200	1.22
	F	400	1.24	G	1000	1.42	H	1600	1.54	I	2000	1.56			
Anthracene	A	2.0	1.22	B	4.0	1.20	C	20	1.15	D	100	1.15	E	200	1.19
	F	400	1.28	G	1000	1.38	H	1600	1.52	I	2000	1.63			
Fluoranthene	A	2.0	1.40	B	4.0	1.28	C	20	1.28	D	100	1.26	E	200	1.32
	F	400	1.42	G	1000	1.65	H	1600	1.75	I	2000	1.83			
Pyrene	A	2.0	1.85	B	4.0	1.76	C	20	1.71	D	100	1.68	E	200	1.71
	F	400	1.76	G	1000	1.71	H	1600	1.71	I	2000	1.69			
Benz(a)anthracene	A	2.0	1.75	B	4.0	1.49	C	20	1.35	D	100	1.28	E	200	1.30
	F	400	1.33	G	1000	1.34	H	1600	1.37	I	2000	1.41			
Chrysene	A	2.0	1.36	B	4.0	1.30	C	20	1.35	D	100	1.30	E	200	1.30
	F	400	1.32	G	1000	1.33	H	1600	1.36	I	2000	1.36			
Benzo(b)fluoranthene	A	2.0	1.38	B	4.0	1.41	C	20	1.42	D	100	1.38	E	200	1.40
	F	400	1.45	G	1000	1.48	H	1600	1.55	I	2000	1.59			
Benzo(k)fluoranthene	A	2.0	1.41	B	4.0	1.33	C	20	1.36	D	100	1.32	E	200	1.40
	F	400	1.44	G	1000	1.49	H	1600	1.55	I	2000	1.62			

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Calibration Date: 12/10/2004

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL4064
Instrument ID: MS11

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Benzo(a)pyrene	A	2.0	1.17	B	4.0	1.34	C	20	1.14	D	100	1.19	E	200	1.23
	F	400	1.29	G	1000	1.33	H	1600	1.39	I	2000	1.43			
Indeno(1,2,3-cd)pyrene	A	2.0	1.16	B	4.0	1.03	C	20	0.903	D	100	1.01	E	200	1.09
	F	400	1.15	G	1000	1.28	H	1600	1.32	I	2000	1.37			
Dibenz(a,h)anthracene	A	2.0	1.10	B	4.0	1.03	C	20	0.776	D	100	0.887	E	200	0.979
	F	400	1.11	G	1000	1.26	H	1600	1.33	I	2000	1.38			
Benzo(g,h,i)perylene	A	2.0	1.62	B	4.0	1.40	C	20	1.36	D	100	1.36	E	200	1.40
	F	400	1.47	G	1000	1.55	H	1600	1.60	I	2000	1.66			
Fluorene-d10	A	2.0	1.36	B	4.0	1.18	C	20	1.24	D	100	1.26	E	200	1.30
	F	400	1.40	G	1000	1.53	H	1600	1.71	I	2000	1.79			
Fluoranthene-d10	A	2.0	1.32	B	4.0	1.30	C	20	1.27	D	100	1.30	E	200	1.33
	F	400	1.47	G	1000	1.69	H	1600	1.81	I	2000	1.86			
Terphenyl-d14	A	2.0	1.30	B	4.0	1.25	C	20	1.19	D	100	1.11	E	200	1.13
	F	400	1.19	G	1000	1.19	H	1600	1.22	I	2000	1.25			

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Calibration Date: 12/10/2004

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL4064
Instrument ID: MS11

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	5.6		≤ 15	1.17		0.01
1-Methylnaphthalene	MS	AverageRF	% RSD	9.8		≤ 15	0.821		0.01
2-Methylnaphthalene	MS	AverageRF	% RSD	11.3		≤ 15	0.904		0.01
Acenaphthylene	MS	AverageRF	% RSD	9.4		≤ 15	2.08		0.01
Acenaphthene	MS	AverageRF	% RSD	12.0		≤ 15	1.27		0.01
Fluorene	MS	AverageRF	% RSD	13.6		≤ 15	1.56		0.01
Phenanthrene	MS	AverageRF	% RSD	10.6		≤ 15	1.34		0.01
Anthracene	MS	AverageRF	% RSD	13.2		≤ 15	1.30		0.01
Fluoranthene	MS	AverageRF	% RSD	15.0		≤ 15	1.46		0.01
Pyrene	MS	AverageRF	% RSD	3.0		≤ 15	1.73		0.01
Benz(a)anthracene	MS	AverageRF	% RSD	10.4		≤ 15	1.40		0.01
Chrysene	MS	AverageRF	% RSD	2.1		≤ 15	1.33		0.01
Benzo(b)fluoranthene	MS	AverageRF	% RSD	5.1		≤ 15	1.45		0.01
Benzo(k)fluoranthene	MS	AverageRF	% RSD	7.1		≤ 15	1.44		0.01
Benzo(a)pyrene	MS	AverageRF	% RSD	8.1		≤ 15	1.28		0.01
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	13.6		≤ 15	1.15		0.01
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	18.5	*	≤ 15	1.09		0.01
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	7.9		≤ 15	1.49		0.01
Fluorene-d10	SURR	AverageRF	% RSD	15.1	*	≤ 15	1.42		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	16.0	*	≤ 15	1.48		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	4.9		≤ 15	1.20		0.01

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Calibration Date: 12/10/2004
Date Analyzed: 12/10/2004

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration ID: CAL4064
Units: ng/ml

File ID: J:\MS11\DATA\121004\1210G020.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	200	190	1.17	1.13	-4	NA	± 20 %	AverageRF
1-Methylnaphthalene	200	190	0.821	0.792	-4	NA	± 20 %	AverageRF
2-Methylnaphthalene	200	190	0.904	0.877	-3	NA	± 20 %	AverageRF
Acenaphthylene	200	190	2.08	1.96	-6	NA	± 20 %	AverageRF
Acenaphthene	200	190	1.27	1.21	-5	NA	± 20 %	AverageRF
Fluorene	200	180	1.56	1.42	-9	NA	± 20 %	AverageRF
Phenanthrene	200	190	1.34	1.25	-6	NA	± 20 %	AverageRF
Anthracene	200	190	1.30	1.26	-3	NA	± 20 %	AverageRF
Fluoranthene	200	180	1.46	1.32	-10	NA	± 20 %	AverageRF
Pyrene	200	200	1.73	1.72	-1	NA	± 20 %	AverageRF
Benz(a)anthracene	200	190	1.40	1.32	-6	NA	± 20 %	AverageRF
Chrysene	200	200	1.33	1.32	-1	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	200	200	1.45	1.44	-1	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	200	200	1.44	1.44	1	NA	± 20 %	AverageRF
Benzo(a)pyrene	200	200	1.28	1.25	-2	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	200	170	1.15	0.962	-16	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	200	170	1.09	0.917	-16	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	200	190	1.49	1.38	-7	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/29/2004

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 12/10/2004
Calibration ID: CAL4064
Analysis Lot: KWG0500141
Units: ng/ml

File ID: J:\MS11\DATA\122904\1229F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	390	0.01	1.17	1.14	-3	NA	± 20 %	AverageRF
1-Methylnaphthalene	400	390	0.01	0.821	0.807	-2	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.01	0.904	0.897	-1	NA	± 20 %	AverageRF
Acenaphthylene	400	390	0.01	2.08	2.05	-2	NA	± 20 %	AverageRF
Acenaphthene	400	400	0.01	1.27	1.26	-1	NA	± 20 %	AverageRF
Fluorene	400	390	0.01	1.56	1.52	-2	NA	± 20 %	AverageRF
Phenanthrene	400	370	0.01	1.34	1.22	-9	NA	± 20 %	AverageRF
Anthracene	400	380	0.01	1.30	1.24	-5	NA	± 20 %	AverageRF
Fluoranthene	400	400	0.01	1.46	1.46	0	NA	± 20 %	AverageRF
Pyrene	400	380	0.01	1.73	1.64	-5	NA	± 20 %	AverageRF
Benz(a)anthracene	400	370	0.01	1.40	1.28	-9	NA	± 20 %	AverageRF
Chrysene	400	390	0.01	1.33	1.30	-2	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	380	0.01	1.45	1.39	-4	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	400	0.01	1.44	1.45	1	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	380	0.01	1.28	1.23	-4	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	380	0.01	1.15	1.08	-6	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	410	0.01	1.09	1.13	3	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	390	0.01	1.49	1.46	-2	NA	± 20 %	AverageRF
Fluorene-d10	400	420	0.01	1.42	1.49	5	NA	± 20 %	AverageRF
Fluoranthene-d10	400	420	0.01	1.48	1.55	4	NA	± 20 %	AverageRF
Terphenyl-d14	400	390	0.01	1.20	1.18	-2	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983
Date Analyzed: 12/30/2004

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 12/10/2004
Calibration ID: CAL4064
Analysis Lot: KWG0500165
Units: ng/ml

File ID: J:\MS11\DATA\122904\1229F033.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	390	0.01	1.17	1.14	-3	NA	± 20 %	AverageRF
1-Methylnaphthalene	400	410	0.01	0.821	0.835	2	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	420	0.01	0.904	0.940	4	NA	± 20 %	AverageRF
Acenaphthylene	400	400	0.01	2.08	2.07	0	NA	± 20 %	AverageRF
Acenaphthene	400	390	0.01	1.27	1.25	-1	NA	± 20 %	AverageRF
Fluorene	400	400	0.01	1.56	1.54	-1	NA	± 20 %	AverageRF
Phenanthrene	400	370	0.01	1.34	1.24	-7	NA	± 20 %	AverageRF
Anthracene	400	380	0.01	1.30	1.25	-4	NA	± 20 %	AverageRF
Fluoranthene	400	410	0.01	1.46	1.50	2	NA	± 20 %	AverageRF
Pyrene	400	380	0.01	1.73	1.66	-4	NA	± 20 %	AverageRF
Benz(a)anthracene	400	370	0.01	1.40	1.29	-8	NA	± 20 %	AverageRF
Chrysene	400	380	0.01	1.33	1.28	-4	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	380	0.01	1.45	1.38	-5	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	410	0.01	1.44	1.47	2	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	380	0.01	1.28	1.22	-4	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	390	0.01	1.15	1.12	-2	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	410	0.01	1.09	1.12	3	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	400	0.01	1.49	1.51	1	NA	± 20 %	AverageRF
Fluorene-d10	400	410	0.01	1.42	1.45	3	NA	± 20 %	AverageRF
Fluoranthene-d10	400	430	0.01	1.48	1.59	7	NA	± 20 %	AverageRF
Terphenyl-d14	400	400	0.01	1.20	1.19	-1	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0500141
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1229F001.D	GC/MS Tuning - Decafluorotripheny	KWG0500141-1	12/29/2004	10:53		12/29/2004	11:05
1229F002.D	Continuing Calibration Verification	KWG0500141-2	12/29/2004	11:10		12/29/2004	11:29
1229F003.D	Instrument Blank	KWG0500141-3	12/29/2004	11:37		12/29/2004	11:56
1229F004.D	Method Blank	KWG0420082-3	12/29/2004	12:03		12/29/2004	12:22
1229F005.D	ZZZZZZ	ZZZZZZ	12/29/2004	12:30		12/29/2004	12:49
1229F006.D	ZZZZZZ	ZZZZZZ	12/29/2004	12:56		12/29/2004	13:15
1229F007.D	ZZZZZZ	ZZZZZZ	12/29/2004	13:23		12/29/2004	13:42
1229F008.D	ZZZZZZ	ZZZZZZ	12/29/2004	13:49		12/29/2004	14:08
1229F009.D	ZZZZZZ	ZZZZZZ	12/29/2004	14:16		12/29/2004	14:35
1229F010.D	ZZZZZZ	ZZZZZZ	12/29/2004	14:43		12/29/2004	15:02
1229F011.D	ZZZZZZ	ZZZZZZ	12/29/2004	15:09		12/29/2004	15:28
1229F012.D	ZZZZZZ	ZZZZZZ	12/29/2004	15:36		12/29/2004	15:55
1229F013.D	ZZZZZZ	ZZZZZZ	12/29/2004	16:02		12/29/2004	16:21
1229F014.D	ZZZZZZ	ZZZZZZ	12/29/2004	16:29		12/29/2004	16:48
1229F015.D	ZZZZZZ	ZZZZZZ	12/29/2004	16:55		12/29/2004	17:14
1229F016.D	ZZZZZZ	ZZZZZZ	12/29/2004	17:22		12/29/2004	17:41
1229F017.D	ZZZZZZ	ZZZZZZ	12/29/2004	17:48		12/29/2004	18:07
1229F018.D	ZZZZZZ	ZZZZZZ	12/29/2004	18:15		12/29/2004	18:34
1229F019.D	ZZZZZZ	ZZZZZZ	12/29/2004	18:41		12/29/2004	19:00
1229F020.D	ZZZZZZ	ZZZZZZ	12/29/2004	19:08		12/29/2004	19:27
1229F021.D	ZZZZZZ	ZZZZZZ	12/29/2004	19:34		12/29/2004	19:53
1229F022.D	ZZZZZZ	ZZZZZZ	12/29/2004	20:01		12/29/2004	20:20
1229F023.D	ZZZZZZ	ZZZZZZ	12/29/2004	20:27		12/29/2004	20:46
1229F024.D	ZZZZZZ	ZZZZZZ	12/29/2004	20:54		12/29/2004	21:13
1229F025.D	ZZZZZZ	ZZZZZZ	12/29/2004	21:20		12/29/2004	21:40
1229F026.D	ZZZZZZ	ZZZZZZ	12/29/2004	21:47		12/29/2004	22:06
1229F027.D	ZZZZZZ	ZZZZZZ	12/29/2004	22:13		12/29/2004	22:32
1229F028.D	ZZZZZZ	ZZZZZZ	12/29/2004	22:40		12/29/2004	22:59

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409983

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0500165
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1229F032.D	GC/MS Tuning - Decafluorotripheny	KWG0500165-1	12/30/2004	00:25		12/30/2004	00:44
1229F033.D	Continuing Calibration Verification	KWG0500165-2	12/30/2004	00:52		12/30/2004	01:11
1229F034.D	Instrument Blank	KWG0500165-3	12/30/2004	01:18		12/30/2004	01:37
1229F035.D	ZZZZZZ	ZZZZZZ	12/30/2004	01:44		12/30/2004	02:03
1229F036.D	ZZZZZZ	ZZZZZZ	12/30/2004	02:11		12/30/2004	02:30
1229F037.D	ZZZZZZ	ZZZZZZ	12/30/2004	02:37		12/30/2004	02:56
1229F038.D	ZZZZZZ	ZZZZZZ	12/30/2004	03:03		12/30/2004	03:22
1229F039.D	ZZZZZZ	ZZZZZZ	12/30/2004	03:30		12/30/2004	03:49
1229F040.D	Lab Control Sample	KWG0420082-1	12/30/2004	03:56		12/30/2004	04:15
1229F041.D	Duplicate Lab Control Sample	KWG0420082-2	12/30/2004	04:22		12/30/2004	04:41
1229F042.D	E-KB04-1-Elutriate	K2409983-001	12/30/2004	04:49		12/30/2004	05:08
1229F043.D	E-KB04-2-Elutriate	K2409983-002	12/30/2004	05:15		12/30/2004	05:34
1229F044.D	E-KB04-3-Elutriate	K2409983-003	12/30/2004	05:41		12/30/2004	06:00
1229F045.D	E-KB04-4-Elutriate	K2409983-004	12/30/2004	06:07		12/30/2004	06:26
1229F046.D	E-KB04-5-Elutriate	K2409983-005	12/30/2004	06:34		12/30/2004	06:53
1229F047.D	E-KB04-5-Dupe-Elutriate	K2409983-006	12/30/2004	07:00		12/30/2004	07:19
1229F048.D	E-KB04-6-Elutriate	K2409983-007	12/30/2004	07:27		12/30/2004	07:46
1229F049.D	E-KB04-7-Elutriate	K2409983-008	12/30/2004	07:53		12/30/2004	08:12
1229F050.D	E-KB04-8-Elutriate	K2409983-009	12/30/2004	08:20		12/30/2004	08:39
1229F051.D	RS-KB04-Elutriate	K2409983-010	12/30/2004	08:46		12/30/2004	09:05
1229F052.D	ZZZZZZ	ZZZZZZ	12/30/2004	09:12		12/30/2004	09:31
1229F053.D	ZZZZZZ	ZZZZZZ	12/30/2004	09:39		12/30/2004	09:58
1229F054.D	ZZZZZZ	ZZZZZZ	12/30/2004	10:05		12/30/2004	10:24
1229F055.D	ZZZZZZ	ZZZZZZ	12/30/2004	10:32		12/30/2004	10:51
1229F056.D	ZZZZZZ	ZZZZZZ	12/30/2004	10:58		12/30/2004	11:17
1229F057.D	ZZZZZZ	ZZZZZZ	12/30/2004	11:25		12/30/2004	11:44
1229F058.D	ZZZZZZ	ZZZZZZ	12/30/2004	11:51		12/30/2004	12:10
1229F059.D	ZZZZZZ	ZZZZZZ	12/30/2004	12:18		12/30/2004	12:37

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-7-Elutriate
Lab Code: K2409983-008
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.026	0.024	8.0	J	1	01/04/05

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: E-KB04-8-Elutriate
Lab Code: K2409983-009
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.028	0.027	3.6	J	1	01/04/05

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409983
Date Collected: 12/16/2004
Date Received: 12/17/2004
Date Extracted: 12/20/2004

Butyltins (as cation)

Sample Name: RS-KB04-Elutriate
Lab Code: K2409983-010
Extraction Method: EPA 3520C
Analysis Method: Krone

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
n-Butyltin	0.050	0.0047	0.028	0.028	0.0	J	1	01/04/05

Organic Analysis:
Butyltins (as cation)

Validation Package

1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 ph (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

January 6, 2005 Service Request No: K2409815

Bryan Cotter
PPB Environmental Laboratories, Inc.
6821 SW Archer Road
Gainesville, FL 32608

RE: PPB-USACE King's Bay 2004

Dear Bryan:

Enclosed are the results of the sample(s) submitted to our laboratory on December 11, 2004. For your reference, these analyses have been assigned our service request number K2409815.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jacky
Project Chemist

HJ/jeb

NELAP Accredited ACIL Seal of Excellence Award

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	PPB Environmental	**Service Request No.:**	K2409815
Project:	PPB - USACE Kings Bay 2004	**Date Received:**	12/11/04
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample were received for analysis at Columbia Analytical Services on 12/11/04. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Chromium for the Batch QC sample was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. The matrix spike outlier suggests a potential low bias in this matrix. No further corrective action was appropriate.

Oil and Grease by EPA Method 1664

No anomalies associated with the analysis of these samples were observed.

Organotin Compounds

No anomalies associated with the analysis of these samples were observed.

Organochlorine Pesticides by EPA Method 8081A

Continuing Calibration Verification (CCV) Exceptions:
The primary evaluation criterion was exceeded for Endrin Ketone in CCV 1221F004. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the average percent recovery of all analytes in the verification standard. The standard meets the alternative evaluation criteria.

Sample Notes and Discussion
The MDL is elevated for 4,4'-DDD in sample Method Blank KWF0419840-5. The chromatogram indicated the presence of non-target background components, which were apparently introduced as laboratory artifacts. The contamination prevented adequate resolution of the target compounds at the MDL. Note the level of background was relatively low compared to the MDL, so the affect on the results was minimal. The results are flagged to indicate the anomaly.

Approved by HS **Date** 1/11/05

PCB Aroclors by EPA Method 8082

No anomalies associated with the analysis of these samples were observed.

PCB Congeners by EPA Method 8082

Continuing Calibration Verification (CCV) Exceptions:
The primary evaluation criterion was exceeded for PCB 149 in CCV 1221F004 and CCV 1221F014. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the average percent recovery of all analytes in the verification standard. The standard meets the alternative evaluation criteria.

Laboratory Control Sample (LCS) Exceptions:
The recovery of PCB 28 in LCS KWG0419850-1 and Duplicate LCS KWG0419850-2 were outside the control limits listed in the results summary. The limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed are in the range expected for this procedure. No further corrective action was appropriate.

Approved by HG **Date** 1/11/05

Chain of Custody Documentation

ppb
ENVIRONMENTAL LABORATORIES, INC.
6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 · FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

K2409815

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
		Subcontractor CAS Kelso
		Shipping Method Fed Ex Pri

CLIENT NAME: PPB-USACE Kings Bay 2004
CLIENT PROJECT:
SITE NAME & ADDRESS:
SAMPLERS: *(Signature)*
LAB REPORT GOES TO (Client contact person): Bryan Cotter

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS: See attached SOW								Lab I.D. Number
261676	12/08/04	0840		✓	E-KB04-reference water	W	11	✓								

PRESERVATION

CF	Chilled-Filtered
SF	Sulfuric-Filtered
NF	Nitric-Filtered
C	Chilled
S	Sulfuric
N	Nitric
B	Basic/NaOH
Z	Zinc
T	Thiosulfate
H	HCL
Ot	Other (see Remarks)

Precleaned Containers Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
		RC	12/10/04
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
[illegible]	12/10/04 1700	Fran Allair	12/11/04
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time

Remarks and Observations

Please use station location as client ID

Matrix Types S Soil or Sediment WW Wastewater T Animal Tissue SW Surface Water SL Sludge or Solid Waste MW Marine Water GW Ground Water DW Drinking Water P Plant Tissue F Filter A Air Ot Other (See Remarks)

Columbia Analytical Services Inc. PC_____

Cooler Receipt and Preservation Form

Project/Client PPB Work Order K240 9815

Cooler received on 12/11/01 and opened on 12/11/01 by TBlack

1. Were custody seals on outside of coolers? Y **N**

   If yes, how many and where?_____

2. Were custody seals intact? Y **N**
3. Were signature and date present on the custody seals? Y **N**
4. Is the shipper's airbill available and filed? If no, record airbill number:_____ **Y** N
5. COC#

   Temperature of cooler(s) upon receipt: (°C) -0.7

   Temperature Blank: (°C) NA

   Were samples hand delivered on the same day as collection? Y **N**
6. Were custody papers properly filled out (ink, signed, etc.)? **Y** N
7. Type of packing material present ice - cardboard
8. **Did all bottles arrive in good condition (unbroken)?** **Y** N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)? **Y** N
10. Did all bottle labels and tags agree with custody papers? **Y** N
11. **Were the correct types of bottles used for the tests indicated?** **Y** N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y N~~
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y N~~
14. Did the bottles originate from CAS/K or a branch laboratory? Y **N** 1.
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** ~~Y N~~
16. Was C12/Res negative? **Y** N

Explain any discrepancies: 1. bottles are from Client.

RESOLUTION:_____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Metals

METALS

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: PPB Environmental

Service Request: K2409815

Project No.:

Project Name: PPB-USACE King's Bay 2004

Sample No.	Lab Sample ID.
Batch QC 2	K2409069-006D DISS
Batch QC 2	K2409069-006S DISS
Batch QC 1	K2409722-001D
Batch QC 1	K2409722-001S
E-KB04-Reference Water	K2409815-001
E-KB04-Reference WaterD	K2409815-001D
E-KB04-Reference WaterS	K2409815-001S
Method Blank	K2409815-MB

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Signature: [signature]

Date: 1/4/05

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

Client: PPB Environmental
Project No.: NA
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Date Collected: NA
Date Received: NA
Units: µg/L
Basis: NA

Sample Name: Method Blank
Lab Code: K2409815-MB

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	1.00	0.12	1	12/30/04	1/3/05	0.12	U	
Arsenic	200.8	0.50	0.02	1	12/29/04	1/3/05	0.02	U	
Cadmium	200.8	0.020	0.003	1	12/29/04	1/3/05	0.003	U	
Chromium	200.8	0.20	0.04	1	12/29/04	1/3/05	0.04	U	N
Copper	200.8	0.10	0.01	1	12/29/04	1/3/05	0.01	U	
Lead	200.8	0.020	0.009	1	12/29/04	1/3/05	0.009	U	
Mercury	7470A	0.20	0.04	1	12/28/04	12/29/04	0.04	U	
Nickel	200.8	0.20	0.02	1	12/29/04	1/3/05	0.02	U	
Silver	200.8	0.020	0.005	1	12/29/04	1/3/05	0.005	U	
Zinc	200.8	0.50	0.02	1	12/29/04	1/3/05	0.02	U	

% Solids: 0.0

Comments:

METALS
- 5a -
SPIKE SAMPLE RECOVERY

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name: Batch QC 1
Lab Code: K2409722-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Mercury	75 - 125	1.01		0.04	U	1.00	101		7470A

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
- 5a -
SPIKE SAMPLE RECOVERY

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name: Batch QC 2
Lab Code: K2409069-006S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	32 - 136	5.76		4.91		2.00	43		200.8
Cadmium	58 - 123	1.700		0.006	B	2.000	85		200.8
Chromium	57 - 122	1.53		0.63		2.00	45	N	200.8
Copper	29 - 134	1.61		0.17		2.00	72		200.8
Lead	61 - 115	1.700		0.009	U	2.000	85		200.8
Nickel		13.5		11.7		2.00	90		200.8
Silver	65 - 109	1.610		0.005	U	2.000	81		200.8
Zinc	46 - 134	1.39		0.42	B	2.00	49		200.8

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
- 5a -
SPIKE SAMPLE RECOVERY

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name: E-KB04-Reference WaterS
Lab Code: K2409815-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	70 - 130	413		1.43		400	103		200.8

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
- 6 -
DUPLICATES

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name:Batch QC 1 Lab Code: K2409722-001D

Analyte	Control Limit(%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Mercury		0.04	U	0.04	U			7470A

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
- 6 -
DUPLICATES

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name:Batch QC 2
Lab Code: K2409069-006D DISS

Analyte	Control Limit(%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic	20	4.91		4.78		3		200.8
Cadmium		0.006	B	0.003	U	200.0		200.8
Chromium		0.63		0.64		2		200.8
Copper		0.17		0.17		1		200.8
Lead		0.009	U	0.009	U			200.8
Nickel	20	11.7		11.0		6		200.8
Silver		0.005	U	0.005	U			200.8
Zinc		0.42	B	0.44	B	4		200.8

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
- 6 -
DUPLICATES

Client: PPB Environmental
Project No.:
Project Name: PPB-USACE King's Bay 2004
Matrix: WATER

Service Request: K2409815
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name:E-KB04-Reference WaterD Lab Code: K2409815-001D

Analyte	Control Limit(%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony		1.43		1.90		28		200.8

An empty field in the Control Limit column indicates the control limit is not applicable.

METALS
-10-
METHOD DETECTION LIMITS

Client: PPB Environmental

Service Request: K2409815

Project No.:

Project Name: PPB-USACE King's Bay 2004

ICP/ICP-MS ID #:

GFAA ID #:

AA ID #: CETAC-1

Analyte	Wave-length	Back-ground	MRL (ug/L)	MDL (ug/L)	Method
Mercury	253.70	BD	0.20	0.04	7470A

Comments

METALS
-10-
METHOD DETECTION LIMITS

Client: PPB Environmental

Service Request: K2409815

Project No.:

Project Name: PPB-USACE King's Bay 2004

ICP/ICP-MS ID #: Excell ICPMS

GFAA ID #:

AA ID #:

Analyte	Mass	Back-ground	MRL (ug/L)	MDL (ug/L)	Method
Antimony	123		0.05	0.01	200.8
Arsenic	75		5.00	0.20	200.8
Cadmium	111		0.200	0.030	200.8
Chromium	52		2.00	0.40	200.8
Copper	65		1.00	0.08	200.8
Lead	208		0.200	0.090	200.8
Nickel	60		2.00	0.20	200.8
Silver	107		0.200	0.050	200.8
Zinc	66		5.00	0.20	200.8

Comments

Instrument ID: Thermo Elemental Excell | **Method: EPA 200.8**
Experiment: 01-03-04D | **Analyst: Jim Chan**
Units: µg/L (ppb) | **Analysis Lot # : KA0405667**

Sample Name:		**PBW K9815**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 15:55**					
Antimony	121	0.0018	0.0023	0.0032	**0.0025**	0.0007	28.73
Antimony	123	0.001	0.001	0.0005	**0.0008**	0.0003	34.25

Internal Standard Factors:

Indium	115	0.985	0.975	0.977	**0.985**	n/a	n/a

Instrument ID: Thermo Elemental Excell | **Method: EPA 200.8**
Experiment: 01-03-04D | **Analyst: Jim Chan**
Units: µg/L (ppb) | **Analysis Lot # : KA0405667**

Sample Name:		**K9815-01**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 15:56**					
Antimony	121	0.0712	0.0777	0.0837	**0.0775**	0.0063	8.074
Antimony	123	0.0756	0.0631	0.0756	**0.0714**	0.0072	10.11

Internal Standard Factors:

Indium	115	1.157	1.144	1.141	**1.157**	n/a	n/a

Instrument ID: Thermo Elemental Excell | **Method: EPA 200.8**
Experiment: 01-03-04D | **Analyst: Jim Chan**
Units: µg/L (ppb) | **Analysis Lot # : KA0405667**

Sample Name:		**K9815-01D**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 15:57**					
Antimony	121	0.0991	0.0925	0.0955	**0.0957**	0.0033	3.426
Antimony	123	0.1007	0.0909	0.0926	**0.0948**	0.0053	5.549

Internal Standard Factors:

Indium	115	1.109	1.123	1.124	**1.109**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-04D
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405667

Sample Name:		**K9815-01S**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 15:59**					
Antimony	121	20.47	20.61	20.43	**20.5**	0.0972	0.4739
Antimony	123	20.62	20.68	20.6	**20.63**	0.042	0.2037

Internal Standard Factors:

Indium	115	1.087	1.066	1.062	**1.087**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**PBW K9069**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 9:46**					
Arsenic	75	-0.1498	0.0154	-0.0484	**-0.061**	0.0833	136.6
Beryllium	9	-0.0007	-0.001	-0.0004	**-0.0007**	0.0003	43.32
Cadmium	111	0.0094	0.0058	0.0012	**0.0054**	0.0041	75.86
Cadmium	114	0.0005	0.0015	0.0016	**0.0012**	0.0007	54.25
Chromium	52	0.0185	-0.0172	-0.0015	**0**	0.0179	39580
Chromium	53	-1.99	-3.154	-2.882	**-2.675**	0.6091	22.77
Cobalt	59	-0.0032	-0.0044	-0.0058	**-0.0045**	0.0013	29.82
Copper	63	-0.0081	-0.0088	-0.0066	**-0.0078**	0.0011	14.44
Copper	65	-0.0037	-0.0008	-0.0055	**-0.0033**	0.0024	70.69
Lead	206	-0.0028	0.0004	-0.0049	**-0.0024**	0.0027	108.7
Lead	207	0.0017	-0.0001	-0.0005	**0.0004**	0.0012	309.4
Lead	208	-0.0017	0.0015	-0.0022	**-0.0008**	0.002	251.3
Molybdenum	95	-0.0047	-0.0057	-0.0069	**-0.0058**	0.0011	18.64
Molybdenum	97	-0.0026	0.0032	0.0045	**0.0017**	0.0038	219.5
Molybdenum	98	0.0037	0.0008	0.0012	**0.0019**	0.0016	83.5
Nickel	60	-0.0582	0.0218	0.1831	**0.0489**	0.1229	251.5
Nickel	62	0.1427	0.0696	0.186	**0.1328**	0.0588	44.3
Selenium	77	-0.6696	-1.272	-2.144	**-1.362**	0.7414	54.43
Selenium	78	-1.259	-1.091	-1.301	**-1.217**	0.1114	9.15
Selenium	82	0.0807	-0.0327	-0.1026	**-0.0182**	0.0925	508.3
Silver	107	-0.0001	-0.0016	-0.0003	**-0.0007**	0.0008	120.9
Silver	109	0.0018	0.0068	0.0051	**0.0046**	0.0025	54.72
Thallium	203	-0.0011	0.0002	-0.0009	**-0.0006**	0.0007	122
Thallium	205	0.0018	-0.0008	-0.0002	**0.0003**	0.0014	509.9
Zinc	66	0.0621	0.0619	0.0682	**0.0641**	0.0035	5.523
Zinc	67	-0.3576	-0.3677	-0.398	**-0.3744**	0.021	5.621
Zinc	68	0.045	0.0534	0.0441	**0.0475**	0.0051	10.81

Internal Standard Factors:							
Lithium	6	0.928	0.951	0.877	**0.928**	n/a	n/a
Scandium	45	1.059	1.068	1.013	**1.059**	n/a	n/a
Nickel	61	1.139	1.162	1.129	**1.139**	n/a	n/a
Indium	115	1.114	1.142	1.066	**1.114**	n/a	n/a
Lutetium	175	1.108	1.136	1.065	**1.108**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**K9069-06**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 9:53**					
Arsenic	75	49.21	48.92	49.22	**49.12**	0.1715	0.3491
Beryllium	9	0.0826	0.0986	0.0972	**0.0928**	0.0089	9.571
Cadmium	111	0.0699	0.0474	0.051	**0.0561**	0.0121	21.53
Cadmium	114	0.0697	0.0717	0.0698	**0.0704**	0.0012	1.64
Chromium	52	6.388	6.246	6.319	**6.318**	0.0706	1.117
Chromium	53	1.603	-0.1346	-0.1879	**0.427**	1.019	238.7
Cobalt	59	59.83	59.51	58.54	**59.3**	0.6706	1.131
Copper	63	5.225	5.217	5.14	**5.194**	0.0469	0.9036
Copper	65	1.745	1.66	1.68	**1.695**	0.0446	2.633
Lead	206	0.0484	0.0448	0.0404	**0.0445**	0.004	9.034
Lead	207	0.0399	0.049	0.0408	**0.0432**	0.005	11.66
Lead	208	0.0476	0.0437	0.0413	**0.0442**	0.0032	7.276
Molybdenum	95	21.72	21.53	21.64	**21.63**	0.0957	0.4423
Molybdenum	97	21.63	21.62	21.71	**21.65**	0.0491	0.2266
Molybdenum	98	21.06	21.4	21.03	**21.16**	0.208	0.9829
Nickel	60	114.7	119.4	116.3	**116.8**	2.39	2.047
Nickel	62	121.7	127.8	125	**124.9**	3.048	2.441
Selenium	77	-3.139	-3.025	-3.805	**-3.323**	0.4213	12.68
Selenium	78	-0.4499	-0.2596	-0.423	**-0.3775**	0.103	27.28
Selenium	82	6.251	6.404	6.223	**6.293**	0.0977	1.553
Silver	107	0.035	0.0306	0.0376	**0.0344**	0.0035	10.28
Silver	109	0.029	0.0247	0.0328	**0.0288**	0.004	14.05
Thallium	203	0.0077	0.004	0.0036	**0.0051**	0.0023	44.48
Thallium	205	0.0052	0.0016	0.0027	**0.0032**	0.0018	57.43
Zinc	66	4.161	4.189	4.199	**4.183**	0.0198	0.4735
Zinc	67	16.17	15.93	16.01	**16.04**	0.1229	0.7664
Zinc	68	14.15	14.5	13.64	**14.09**	0.4338	3.078

Internal Standard Factors:							
Lithium	6	1.282	1.35	1.342	**1.282**	n/a	n/a
Scandium	45	1.11	1.199	1.221	**1.11**	n/a	n/a
Nickel	61	1.623	1.817	1.808	**1.623**	n/a	n/a
Indium	115	1.263	1.35	1.35	**1.263**	n/a	n/a
Lutetium	175	1.169	1.267	1.276	**1.169**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**K9069-06D**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 9:56**					
Arsenic	75	48.36	48.44	46.77	**47.85**	0.939	1.962
Beryllium	9	0.0896	0.0968	0.0902	**0.0922**	0.004	4.298
Cadmium	111	0.0127	0.0168	0.0159	**0.0152**	0.0022	14.47
Cadmium	114	0.0399	0.0401	0.0348	**0.0383**	0.003	7.819
Chromium	52	6.555	6.254	6.501	**6.437**	0.1607	2.496
Chromium	53	2.082	1.319	2.785	**2.062**	0.7334	35.57
Cobalt	59	25.6	25.92	25.65	**25.72**	0.1724	0.6702
Copper	63	5.466	5.65	5.77	**5.629**	0.1533	2.723
Copper	65	1.667	1.656	1.705	**1.676**	0.0256	1.529
Lead	206	0.0404	0.0388	0.0439	**0.041**	0.0026	6.333
Lead	207	0.0465	0.0454	0.0415	**0.0445**	0.0026	5.853
Lead	208	0.0419	0.0426	0.0446	**0.043**	0.0014	3.25
Molybdenum	95	7.941	7.982	7.774	**7.899**	0.1102	1.396
Molybdenum	97	7.809	8.058	7.661	**7.843**	0.201	2.563
Molybdenum	98	7.696	7.627	7.483	**7.602**	0.1087	1.43
Nickel	60	111.6	110.2	109.2	**110.3**	1.171	1.061
Nickel	62	133.7	144.1	153.4	**143.7**	9.844	6.85
Selenium	77	-3.608	-3.667	-3.325	**-3.533**	0.1831	5.182
Selenium	78	0.9689	1.274	1.609	**1.284**	0.3201	24.93
Selenium	82	6.904	7.084	6.713	**6.9**	0.1853	2.686
Silver	107	0.0508	0.0497	0.0447	**0.0484**	0.0032	6.66
Silver	109	0.0291	0.0316	0.025	**0.0286**	0.0033	11.54
Thallium	203	0.0032	0.0014	0.0034	**0.0027**	0.0011	42.01
Thallium	205	0.002	0.001	0.0018	**0.0016**	0.0005	30.85
Zinc	66	4.466	4.191	4.38	**4.346**	0.1407	3.238
Zinc	67	17.24	16.85	16.96	**17.02**	0.2026	1.19
Zinc	68	15.68	15.12	15.29	**15.36**	0.2871	1.869

Internal Standard Factors:

Lithium	6	1.285	1.378	1.293	**1.285**	n/a	n/a
Scandium	45	1.125	1.208	1.151	**1.125**	n/a	n/a
Nickel	61	4.933	5.33	5.109	**4.933**	n/a	n/a
Indium	115	1.287	1.378	1.302	**1.287**	n/a	n/a
Lutetium	175	1.157	1.258	1.217	**1.157**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**K9069-06S**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 10:16**					
Arsenic	75	48.75	49.46	49.13	**49.11**	0.3559	0.7247
Beryllium	9	12.15	11.82	11.6	**11.86**	0.2733	2.305
Cadmium	111	17	16.83	17.12	**16.98**	0.1435	0.845
Cadmium	114	17.01	17.15	17.09	**17.08**	0.0674	0.3946
Chromium	52	15.4	15.16	15.34	**15.3**	0.1238	0.8089
Chromium	53	6.899	6.304	6.321	**6.508**	0.3385	5.202
Cobalt	59	89.61	88.83	89.12	**89.19**	0.3921	0.4396
Copper	63	19.2	19.24	19.42	**19.29**	0.1162	0.6026
Copper	65	15.93	16.15	16.34	**16.14**	0.2053	1.272
Lead	206	16.96	17.23	17.08	**17.09**	0.1352	0.7913
Lead	207	16.73	17.13	17	**16.95**	0.2004	1.182
Lead	208	16.83	17.09	17.03	**16.98**	0.1386	0.8158
Molybdenum	95	36.51	35.92	36.09	**36.17**	0.3026	0.8365
Molybdenum	97	35.92	35.68	36.08	**35.89**	0.2011	0.5603
Molybdenum	98	35.73	35.97	35.82	**35.84**	0.1228	0.3425
Nickel	60	136.7	135.3	133.8	**135.3**	1.479	1.094
Nickel	62	148.6	146	145.4	**146.6**	1.691	1.153
Selenium	77	13.73	10.95	11.74	**12.14**	1.433	11.8
Selenium	78	17.2	16.66	16.63	**16.83**	0.3231	1.92
Selenium	82	22.88	22.12	21.85	**22.28**	0.5346	2.399
Silver	107	16.28	15.81	16.28	**16.12**	0.2752	1.707
Silver	109	16.44	15.92	16.02	**16.13**	0.276	1.712
Thallium	203	17.28	17.46	17.43	**17.39**	0.0986	0.5669
Thallium	205	17.19	17.59	17.65	**17.47**	0.2502	1.432
Zinc	66	13.86	14.03	13.83	**13.9**	0.1095	0.7879
Zinc	67	21.02	20.98	20.4	**20.8**	0.3496	1.681
Zinc	68	20.68	20.78	20.76	**20.74**	0.0531	0.2561

Internal Standard Factors:

Lithium	6	1.295	1.232	1.238	**1.295**	n/a	n/a
Scandium	45	1.179	1.163	1.188	**1.179**	n/a	n/a
Nickel	61	1.616	1.582	1.591	**1.616**	n/a	n/a
Indium	115	1.368	1.297	1.334	**1.368**	n/a	n/a
Lutetium	175	1.296	1.248	1.297	**1.296**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**K9069-01**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 10:19**					
Arsenic	75	17.65	17.44	17.04	**17.38**	0.308	1.773
Beryllium	9	0.0551	0.0499	0.0389	**0.048**	0.0082	17.18
Cadmium	111	0	-0.0015	-0.0042	**-0.0019**	0.0021	111
Cadmium	114	0.0201	0.0213	0.0216	**0.021**	0.0008	3.696
Chromium	52	6.393	6.41	6.251	**6.351**	0.0871	1.372
Chromium	53	-2.96	-3.457	-3.668	**-3.362**	0.3635	10.81
Cobalt	59	7.274	7.348	7.192	**7.272**	0.0779	1.072
Copper	63	3.735	3.748	3.644	**3.709**	0.0566	1.525
Copper	65	1.101	1.103	1.09	**1.098**	0.007	0.6342
Lead	206	0.0996	0.0804	0.0933	**0.0911**	0.0098	10.74
Lead	207	0.0902	0.0905	0.1009	**0.0939**	0.0061	6.472
Lead	208	0.0964	0.0915	0.0955	**0.0945**	0.0026	2.798
Molybdenum	95	2.353	2.279	2.379	**2.337**	0.0519	2.221
Molybdenum	97	2.375	2.285	2.335	**2.332**	0.0454	1.946
Molybdenum	98	2.179	2.145	2.214	**2.179**	0.0342	1.57
Nickel	60	41.93	39.53	39.67	**40.38**	1.346	3.333
Nickel	62	47.56	48.45	47.12	**47.71**	0.6769	1.419
Selenium	77	-6.681	-7.219	-6.427	**-6.776**	0.4043	5.968
Selenium	78	-1.037	-0.9606	-0.4643	**-0.8207**	0.311	37.89
Selenium	82	4.616	4.408	4.552	**4.525**	0.1064	2.351
Silver	107	0.025	0.029	0.0254	**0.0265**	0.0022	8.292
Silver	109	0.0214	0.0194	0.0216	**0.0208**	0.0012	5.997
Thallium	203	0.129	0.0656	0.0372	**0.0773**	0.047	60.82
Thallium	205	0.1193	0.0633	0.0369	**0.0731**	0.0421	57.52
Zinc	66	7.94	8.171	7.709	**7.94**	0.2307	2.906
Zinc	67	25.74	25.68	24.85	**25.42**	0.497	1.955
Zinc	68	23.88	23.47	22.63	**23.33**	0.6396	2.742

Internal Standard Factors:

Lithium	6	1.253	1.175	1.213	**1.253**	n/a	n/a
Scandium	45	1.17	1.124	1.163	**1.17**	n/a	n/a
Nickel	61	4.914	4.611	4.829	**4.914**	n/a	n/a
Indium	115	1.355	1.281	1.361	**1.355**	n/a	n/a
Lutetium	175	1.229	1.179	1.235	**1.229**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**K9069-02**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 10:23**					
Arsenic	75	18.2	17.28	18.07	**17.85**	0.4971	2.785
Beryllium	9	0.0463	0.0398	0.037	**0.041**	0.0048	11.62
Cadmium	111	0.0004	-0.0155	-0.005	**-0.0067**	0.0081	120.9
Cadmium	114	0.0235	0.0264	0.0217	**0.0239**	0.0024	9.963
Chromium	52	6.292	6.069	6.246	**6.202**	0.1178	1.899
Chromium	53	-3.547	-4.925	-4.617	**-4.363**	0.723	16.57
Cobalt	59	11.68	11.37	11.43	**11.49**	0.1656	1.441
Copper	63	3.975	3.755	3.846	**3.858**	0.1103	2.859
Copper	65	1.458	1.435	1.465	**1.452**	0.0157	1.081
Lead	206	0.0625	0.0676	0.0647	**0.0649**	0.0026	3.948
Lead	207	0.0723	0.0675	0.0683	**0.0694**	0.0026	3.694
Lead	208	0.068	0.0691	0.0674	**0.0682**	0.0009	1.276
Molybdenum	95	3.05	3.018	3.063	**3.044**	0.0231	0.7588
Molybdenum	97	3.171	3.058	3.066	**3.099**	0.063	2.034
Molybdenum	98	2.965	2.951	2.983	**2.966**	0.0164	0.5532
Nickel	60	40.98	40.91	40.6	**40.83**	0.2067	0.5062
Nickel	62	49.63	47.32	47.78	**48.25**	1.223	2.535
Selenium	77	-6.684	-7.708	-7.89	**-7.427**	0.6502	8.754
Selenium	78	-0.4106	-0.4709	-0.6792	**-0.5202**	0.1409	27.09
Selenium	82	3.425	3.572	3.494	**3.497**	0.0739	2.112
Silver	107	-0.007	-0.0126	-0.0016	**-0.0071**	0.0055	78.11
Silver	109	-0.0041	-0.0043	-0.006	**-0.0048**	0.0011	22.37
Thallium	203	0.0158	0.014	0.0128	**0.0142**	0.0015	10.53
Thallium	205	0.0148	0.0155	0.0112	**0.0138**	0.0023	16.45
Zinc	66	5.122	4.927	4.801	**4.95**	0.1615	3.263
Zinc	67	25.29	22.7	23.49	**23.83**	1.326	5.567
Zinc	68	22.03	20.34	20.73	**21.03**	0.8849	4.207

Internal Standard Factors:							
Lithium	6	1.208	1.219	1.194	**1.208**	n/a	n/a
Scandium	45	1.17	1.173	1.191	**1.17**	n/a	n/a
Nickel	61	3.639	3.753	3.771	**3.639**	n/a	n/a
Indium	115	1.335	1.346	1.344	**1.335**	n/a	n/a
Lutetium	175	1.204	1.233	1.243	**1.204**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05A
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405664

Sample Name:		**K9069-03**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 10:27**					
Arsenic	75	37.82	37.68	38.85	**38.12**	0.6358	1.668
Beryllium	9	0.0394	0.0372	0.0428	**0.0398**	0.0028	7.139
Cadmium	111	-0.015	-0.0125	-0.0043	**-0.0106**	0.0056	52.88
Cadmium	114	0.024	0.0251	0.0229	**0.024**	0.0011	4.562
Chromium	52	7.348	7.36	7.284	**7.33**	0.0408	0.5569
Chromium	53	-2.035	-3.338	-3.421	**-2.931**	0.7777	26.53
Cobalt	59	7.859	7.784	7.607	**7.75**	0.1292	1.667
Copper	63	4.634	4.502	4.628	**4.588**	0.0741	1.616
Copper	65	1.338	1.361	1.356	**1.352**	0.0118	0.877
Lead	206	1.359	1.41	1.405	**1.391**	0.0279	2.008
Lead	207	1.435	1.456	1.434	**1.442**	0.0121	0.836
Lead	208	1.416	1.435	1.444	**1.431**	0.0138	0.9651
Molybdenum	95	4.26	4.265	4.255	**4.26**	0.005	0.1178
Molybdenum	97	4.289	4.406	4.283	**4.326**	0.0692	1.6
Molybdenum	98	4.016	4.142	4.198	**4.119**	0.0933	2.264
Nickel	60	42.35	42.5	42.34	**42.4**	0.0897	0.2117
Nickel	62	49.34	47.73	48.25	**48.44**	0.8231	1.699
Selenium	77	-5.926	-6.17	-6.157	**-6.084**	0.1372	2.255
Selenium	78	-0.8201	-0.7715	-0.7027	**-0.7647**	0.059	7.715
Selenium	82	5.676	5.9	5.811	**5.795**	0.1127	1.945
Silver	107	-0.0016	-0.0006	0.0054	**0.0011**	0.0038	353.2
Silver	109	-0.0004	-0.0034	-0.0033	**-0.0024**	0.0017	73.27
Thallium	203	0.0051	0.0077	0.0026	**0.0052**	0.0026	49.65
Thallium	205	0.0065	0.004	0.0056	**0.0054**	0.0013	23.85
Zinc	66	49.56	48.97	49.14	**49.22**	0.3043	0.6181
Zinc	67	55.66	55.6	55.13	**55.46**	0.2864	0.5163
Zinc	68	57.81	57.98	57.04	**57.61**	0.5036	0.8741

Internal Standard Factors:

Lithium	6	1.412	1.428	1.394	**1.412**	n/a	n/a
Scandium	45	1.277	1.323	1.341	**1.277**	n/a	n/a
Nickel	61	3.751	3.8	3.879	**3.751**	n/a	n/a
Indium	115	1.45	1.481	1.495	**1.45**	n/a	n/a
Lutetium	175	1.307	1.344	1.369	**1.307**	n/a	n/a

Instrument ID: Thermo Elemental Excell | **Method: EPA 200.8**
Experiment: 01-03-05A | **Analyst: Jim Chan**
Units: µg/L (ppb) | **Analysis Lot # : KA0405664**

Sample Name:		**K9069-04**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 10:30**					
Arsenic	75	39.41	38.03	39.07	**38.84**	0.7176	1.848
Beryllium	9	0.0872	0.0926	0.0712	**0.0837**	0.0111	13.31
Cadmium	111	0.0197	0.0126	0.0303	**0.0208**	0.0089	42.83
Cadmium	114	0.0411	0.0444	0.0396	**0.0417**	0.0024	5.795
Chromium	52	6.251	6.358	6.322	**6.31**	0.0543	0.8606
Chromium	53	-5.141	-5.338	-5.95	**-5.476**	0.4222	7.71
Cobalt	59	13	12.8	12.49	**12.76**	0.2536	1.987
Copper	63	4.581	4.616	4.545	**4.581**	0.036	0.7855
Copper	65	1.581	1.588	1.508	**1.559**	0.0443	2.842
Lead	206	0.0632	0.0624	0.0588	**0.0615**	0.0023	3.802
Lead	207	0.0625	0.0617	0.0527	**0.059**	0.0054	9.196
Lead	208	0.0595	0.0582	0.0553	**0.0577**	0.0022	3.784
Molybdenum	95	12.12	12.02	12.34	**12.16**	0.1644	1.352
Molybdenum	97	12.22	12.12	12.35	**12.23**	0.1153	0.9423
Molybdenum	98	12.03	11.79	12.01	**11.94**	0.1333	1.116
Nickel	60	41.03	41.05	40.91	**41**	0.0787	0.1921
Nickel	62	48.94	48.91	48.82	**48.89**	0.0621	0.1269
Selenium	77	-7.092	-7.569	-7.494	**-7.385**	0.2566	3.475
Selenium	78	-0.5297	-0.5901	-0.3835	**-0.5011**	0.1062	21.2
Selenium	82	4.389	4.767	4.669	**4.608**	0.1961	4.255
Silver	107	0.0187	0.0124	0.022	**0.0177**	0.0049	27.75
Silver	109	0.0103	0.0122	0.01	**0.0108**	0.0012	10.98
Thallium	203	0.0093	0.0044	0.0068	**0.0068**	0.0024	35.4
Thallium	205	0.0038	0.0065	0.0033	**0.0045**	0.0017	38.14
Zinc	66	32.13	32.21	31.65	**32**	0.3034	0.9483
Zinc	67	36.54	36.64	36.6	**36.59**	0.0515	0.1407
Zinc	68	38.54	37.19	38.27	**38**	0.7175	1.888

Internal Standard Factors:

Lithium	6	1.383	1.276	1.319	**1.383**	n/a	n/a
Scandium	45	1.309	1.265	1.33	**1.309**	n/a	n/a
Nickel	61	2.345	2.319	2.413	**2.345**	n/a	n/a
Indium	115	1.415	1.382	1.461	**1.415**	n/a	n/a
Lutetium	175	1.281	1.247	1.314	**1.281**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9069-06S 1/2**			**Mean**	**SD**	**%RSD**
TimeStamp		~~1/3/05 11:23~~					
Arsenic	75	28.57	28.28	29.48	**28.78**	0.6266	2.177
Beryllium	9	6.597	6.725	6.55	**6.624**	0.0903	1.363
Cadmium	111	9.152	9.1	9.022	**9.091**	0.0652	0.7168
Cadmium	114	9.233	9.165	9.261	**9.22**	0.0495	0.5368
Chromium	52	8.417	8.536	8.496	**8.483**	0.0608	0.7169
Chromium	53	9.781	10.23	10.08	**10.03**	0.2286	2.278
Cobalt	59	50.31	50.73	50.48	**50.51**	0.2094	0.4145
Copper	63	10.88	10.89	10.78	**10.85**	0.0594	0.5473
Copper	65	9.567	9.528	9.443	**9.513**	0.0634	0.666
Lead	206	8.995	8.902	9.043	**8.98**	0.0714	0.7949
Lead	207	8.93	8.952	9.006	**8.962**	0.0391	0.4361
Lead	208	8.943	8.85	8.935	**8.909**	0.0515	0.5778
Molybdenum	95	18.6	18.73	19.23	**18.86**	0.334	1.772
Molybdenum	97	17.99	18.26	18.7	**18.31**	0.3577	1.953
Molybdenum	98	18.34	18.53	18.63	**18.5**	0.1492	0.8068
Nickel	60	65.96	64.61	65.67	**65.41**	0.7076	1.082
Nickel	62	68.34	67.22	69.29	**68.28**	1.039	1.521
Selenium	77	11.93	12.07	11.42	**11.81**	0.3414	2.891
Selenium	78	9.286	8.876	9.424	**9.196**	0.2851	3.1
Selenium	82	11.65	11.56	11.75	**11.65**	0.0953	0.8181
Silver	107	8.91	8.87	9.012	**8.931**	0.0732	0.8196
Silver	109	8.837	8.724	9.059	**8.873**	0.1707	1.923
Thallium	203	9.003	8.94	9.078	**9.007**	0.069	0.7664
Thallium	205	8.882	9.063	9.071	**9.005**	0.107	1.189
Zinc	66	8.219	8.202	8.311	**8.244**	0.0588	0.7132
Zinc	67	13.69	13.94	13.74	**13.79**	0.1338	0.9705
Zinc	68	12.76	12.91	13.02	**12.9**	0.1277	0.9904

Internal Standard Factors:

Lithium	6	1.223	1.226	1.198	**1.223**	n/a	n/a
Scandium	45	1.152	1.191	1.186	**1.152**	n/a	n/a
Nickel	61	1.299	1.319	1.337	**1.299**	n/a	n/a
Indium	115	1.21	1.208	1.211	**1.21**	n/a	n/a
Lutetium	175	1.156	1.143	1.148	**1.156**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9069-05**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:28**					
Arsenic	75	113.1	121.4	110.7	**115.1**	5.594	4.861
Beryllium	9	0.152	0.1387	0.1451	**0.1453**	0.0067	4.596
Cadmium	111	0.0507	0.0588	0.0466	**0.052**	0.0062	11.87
Cadmium	114	0.0886	0.0862	0.0953	**0.09**	0.0047	5.231
Chromium	52	16.62	16.67	16.13	**16.47**	0.2993	1.817
Chromium	53	19.19	19.12	18.14	**18.82**	0.5862	3.116
Cobalt	59	19.66	20.23	19.39	**19.76**	0.4298	2.175
Copper	63	5.28	5.344	5.164	**5.263**	0.0911	1.732
Copper	65	1.689	1.845	1.658	**1.731**	0.1006	5.814
Lead	206	0.2149	0.2023	0.2123	**0.2098**	0.0067	3.181
Lead	207	0.2017	0.2214	0.2203	**0.2144**	0.0111	5.153
Lead	208	0.2048	0.2083	0.2118	**0.2083**	0.0035	1.684
Molybdenum	95	9.14	9.119	9.135	**9.131**	0.0108	0.1182
Molybdenum	97	8.923	9.058	8.884	**8.955**	0.0912	1.018
Molybdenum	98	8.686	8.742	8.803	**8.743**	0.0584	0.6674
Nickel	60	102.2	104	101.1	**102.4**	1.448	1.414
Nickel	62	119.1	113.2	112.2	**114.8**	3.712	3.233
Selenium	77	5.185	5.803	5.063	**5.35**	0.3968	7.416
Selenium	78	1.223	0.796	0.4574	**0.8255**	0.3837	46.48
Selenium	82	9.991	9.832	9.274	**9.699**	0.3762	3.879
Silver	107	0.0173	0.021	0.0223	**0.0202**	0.0026	12.88
Silver	109	0.0293	0.0307	0.0235	**0.0278**	0.0038	13.81
Thallium	203	0.0236	0.0161	0.0147	**0.0181**	0.0048	26.28
Thallium	205	0.0234	0.0162	0.0137	**0.0178**	0.0051	28.44
Zinc	66	21.94	22.59	21.96	**22.17**	0.3716	1.676
Zinc	67	53.99	56.08	52.48	**54.18**	1.808	3.337
Zinc	68	49.39	49.23	47.14	**48.59**	1.258	2.59

Internal Standard Factors:

Lithium	6	1.713	1.674	1.566	**1.713**	n/a	n/a
Scandium	45	1.352	1.458	1.328	**1.352**	n/a	n/a
Nickel	61	3.385	3.618	3.416	**3.385**	n/a	n/a
Indium	115	1.385	1.398	1.361	**1.385**	n/a	n/a
Lutetium	175	1.312	1.348	1.286	**1.312**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-01**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:32**					
Arsenic	75	57.58	57.04	57.9	**57.51**	0.4322	0.7515
Beryllium	9	0.0495	0.0536	0.0473	**0.0502**	0.0032	6.318
Cadmium	111	0.0289	0.0245	0.0379	**0.0304**	0.0068	22.31
Cadmium	114	0.327	0.3228	0.3273	**0.3257**	0.0025	0.7719
Chromium	52	2.48	2.502	2.405	**2.463**	0.0507	2.06
Chromium	53	6.381	6.53	5.412	**6.108**	0.6071	9.941
Cobalt	59	87.93	89.4	83.11	**86.81**	3.291	3.79
Copper	63	6.216	6.321	5.894	**6.143**	0.2228	3.626
Copper	65	3.064	2.988	3	**3.017**	0.0409	1.357
Lead	206	0.1762	0.1723	0.1578	**0.1688**	0.0097	5.721
Lead	207	0.1644	0.1751	0.163	**0.1675**	0.0066	3.95
Lead	208	0.168	0.1771	0.1679	**0.171**	0.0053	3.073
Molybdenum	95	8.117	7.969	8.235	**8.107**	0.1332	1.643
Molybdenum	97	7.92	7.84	7.914	**7.891**	0.0447	0.5668
Molybdenum	98	7.835	7.779	7.952	**7.855**	0.0885	1.126
Nickel	60	190.4	190.7	195.1	**192.1**	2.659	1.384
Nickel	62	195.2	197.7	205.4	**199.4**	5.309	2.662
Selenium	77	4.653	3.761	3.687	**4.034**	0.5377	13.33
Selenium	78	1.512	1.204	1.759	**1.492**	0.278	18.64
Selenium	82	3.264	3.312	3.717	**3.431**	0.2492	7.263
Silver	107	0.9104	0.9127	0.9218	**0.915**	0.006	0.6571
Silver	109	0.9223	0.9069	0.9117	**0.9137**	0.0079	0.8603
Thallium	203	0.3706	0.383	0.3679	**0.3738**	0.0081	2.158
Thallium	205	0.3647	0.3795	0.3684	**0.3709**	0.0077	2.083
Zinc	66	41.5	42.65	41.03	**41.73**	0.8324	1.995
Zinc	67	38.6	40.1	37.09	**38.6**	1.502	3.892
Zinc	68	41.32	43.34	40.48	**41.71**	1.471	3.527

Internal Standard Factors:

Lithium	6	1.385	1.27	1.351	**1.385**	n/a	n/a
Scandium	45	1.163	1.108	1.158	**1.163**	n/a	n/a
Nickel	61	1.547	1.44	1.651	**1.547**	n/a	n/a
Indium	115	1.26	1.203	1.27	**1.26**	n/a	n/a
Lutetium	175	1.17	1.109	1.2	**1.17**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-02**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:36**					
Arsenic	75	83.57	83.58	83.85	**83.67**	0.1597	0.1909
Beryllium	9	0.1479	0.1601	0.1222	**0.1434**	0.0194	13.5
Cadmium	111	0.0412	0.0457	0.0516	**0.0462**	0.0052	11.29
Cadmium	114	0.0886	0.0806	0.0904	**0.0865**	0.0052	6.047
Chromium	52	4.938	4.879	5.003	**4.94**	0.062	1.255
Chromium	53	9.135	8.769	8.874	**8.926**	0.1882	2.108
Cobalt	59	43.92	43.06	43.69	**43.55**	0.4445	1.021
Copper	63	5.345	5.458	5.427	**5.41**	0.0583	1.079
Copper	65	1.316	1.326	1.291	**1.311**	0.0179	1.368
Lead	206	0.1272	0.1337	0.1269	**0.1293**	0.0039	2.979
Lead	207	0.1281	0.1413	0.1274	**0.1322**	0.0079	5.952
Lead	208	0.1316	0.1317	0.1325	**0.1319**	0.0005	0.3828
Molybdenum	95	18.93	18.33	19.1	**18.79**	0.4024	2.142
Molybdenum	97	18.38	17.85	18.48	**18.24**	0.3386	1.856
Molybdenum	98	18.02	17.97	18.22	**18.07**	0.1309	0.7245
Nickel	60	76.17	76.4	75.43	**76**	0.5091	0.6698
Nickel	62	81.26	84.17	84.46	**83.3**	1.77	2.125
Selenium	77	4.999	5.184	4.995	**5.059**	0.1076	2.127
Selenium	78	0.4332	0.3023	0.7583	**0.4979**	0.2348	47.15
Selenium	82	8.02	8.452	8.688	**8.387**	0.339	4.042
Silver	107	0.0932	0.0857	0.0882	**0.089**	0.0038	4.303
Silver	109	0.0657	0.0629	0.0752	**0.0679**	0.0065	9.548
Thallium	203	0.0115	0.0084	0.0074	**0.0091**	0.0022	23.79
Thallium	205	0.0106	0.0078	0.0061	**0.0082**	0.0023	27.88
Zinc	66	228.2	232.6	222.8	**227.9**	4.936	2.166
Zinc	67	213.7	219.8	215.9	**216.5**	3.117	1.44
Zinc	68	241.3	239.8	241.1	**240.8**	0.8192	0.3402

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Internal Standard Factors:

Lithium	6	1.85	1.768	1.742	**1.85**	n/a	n/a
Scandium	45	1.467	1.503	1.493	**1.467**	n/a	n/a
Nickel	61	2.189	2.259	2.263	**2.189**	n/a	n/a
Indium	115	1.478	1.433	1.483	**1.478**	n/a	n/a
Lutetium	175	1.4	1.412	1.433	**1.4**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-03**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:40**					
Arsenic	75	28.68	27.71	28.31	**28.23**	0.491	1.739
Beryllium	9	0.0237	0.0294	0.0253	**0.0261**	0.0029	11.22
Cadmium	111	4.202	4.236	4.191	**4.209**	0.0234	0.5553
Cadmium	114	4.436	4.316	4.268	**4.34**	0.0866	1.994
Chromium	52	1.639	1.696	1.609	**1.648**	0.0441	2.675
Chromium	53	5.06	5.781	4.969	**5.27**	0.445	8.444
Cobalt	59	108.4	114.5	106.5	**109.8**	4.178	3.806
Copper	63	6.624	6.791	6.287	**6.567**	0.2564	3.904
Copper	65	3.749	3.804	3.771	**3.775**	0.0278	0.7369
Lead	206	0.397	0.3907	0.3862	**0.3913**	0.0055	1.394
Lead	207	0.3846	0.3811	0.3855	**0.3837**	0.0024	0.6165
Lead	208	0.39	0.3925	0.383	**0.3885**	0.0049	1.271
Molybdenum	95	34.95	33.92	36.16	**35.01**	1.124	3.212
Molybdenum	97	34.83	34.42	35.26	**34.84**	0.4245	1.219
Molybdenum	98	34.76	34.88	35.46	**35.03**	0.3759	1.073
Nickel	60	123	131.4	126.5	**127**	4.244	3.343
Nickel	62	126.3	133.4	133	**130.9**	4.01	3.064
Selenium	77	2.828	2.472	3.022	**2.774**	0.2791	10.06
Selenium	78	1.616	1.124	1.379	**1.373**	0.2461	17.92
Selenium	82	3.209	2.832	3.095	**3.045**	0.1932	6.342
Silver	107	0.11	0.1104	0.1108	**0.1104**	0.0004	0.3488
Silver	109	0.1095	0.112	0.1168	**0.1128**	0.0037	3.308
Thallium	203	0.6408	0.6343	0.6268	**0.634**	0.007	1.103
Thallium	205	0.6066	0.6275	0.614	**0.616**	0.0106	1.721
Zinc	66	372.5	387.1	361	**373.5**	13.08	3.502
Zinc	67	325.9	342.8	327.3	**332**	9.4	2.831
Zinc	68	379.2	386.6	360.3	**375.4**	13.55	3.611

Internal Standard Factors:

Lithium	6	1.504	1.363	1.477	**1.504**	n/a	n/a
Scandium	45	1.308	1.236	1.322	**1.308**	n/a	n/a
Nickel	61	1.547	1.482	1.663	**1.547**	n/a	n/a
Indium	115	1.389	1.314	1.415	**1.389**	n/a	n/a
Lutetium	175	1.307	1.217	1.336	**1.307**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-04**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:43**					
Arsenic	75	71.47	72.72	72.5	**72.23**	0.6656	0.9215
Beryllium	9	0.0489	0.0575	0.0541	**0.0535**	0.0043	8.072
Cadmium	111	0.1129	0.1228	0.0975	**0.1111**	0.0128	11.5
Cadmium	114	0.1774	0.1691	0.1713	**0.1726**	0.0043	2.503
Chromium	52	4.359	4.214	4.409	**4.327**	0.101	2.333
Chromium	53	7.758	7.439	8.07	**7.756**	0.3152	4.065
Cobalt	59	57.46	57.71	58.15	**57.77**	0.3481	0.6026
Copper	63	5.77	5.538	5.534	**5.614**	0.1348	2.401
Copper	65	2.121	2.055	2.161	**2.112**	0.0539	2.551
Lead	206	1.312	1.265	1.355	**1.311**	0.045	3.436
Lead	207	1.405	1.337	1.363	**1.369**	0.0343	2.508
Lead	208	1.382	1.327	1.365	**1.358**	0.0282	2.079
Molybdenum	95	15.04	15.57	15.38	**15.33**	0.2708	1.767
Molybdenum	97	15.06	15.01	15.52	**15.2**	0.2842	1.87
~~Molybdenum~~	~~98~~	~~14.84~~	~~15.15~~	~~15.26~~	~~**15.08**~~	~~0.2188~~	~~1.451~~
Nickel	60	75.42	76.99	75.61	**76.01**	0.8547	1.125
Nickel	62	78.59	81.8	79.92	**80.1**	1.617	2.018
Selenium	77	4.796	5.214	4.577	**4.862**	0.3235	6.654
Selenium	78	0.6155	1.114	0.785	**0.8381**	0.2533	30.23
Selenium	82	7.171	6.916	7.055	**7.048**	0.1276	1.811
Silver	107	0.1006	0.1109	0.0961	**0.1025**	0.0075	7.354
Silver	109	0.0964	0.0921	0.0902	**0.0929**	0.0032	3.432
Thallium	203	0.0163	0.0101	0.0143	**0.0136**	0.0032	23.4
Thallium	205	0.0128	0.0105	0.0124	**0.0119**	0.0012	10.27
Zinc	66	258.1	256.4	268.1	**260.9**	6.321	2.423
Zinc	67	245.5	254.5	247.1	**249**	4.757	1.91
Zinc	68	270.6	272.3	272.8	**271.9**	1.146	0.4216

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Internal Standard Factors:							
Lithium	6	1.801	1.781	1.742	**1.801**	n/a	n/a
Scandium	45	1.44	1.531	1.536	**1.44**	n/a	n/a
Nickel	61	1.815	2.011	1.959	**1.815**	n/a	n/a
Indium	115	1.438	1.533	1.524	**1.438**	n/a	n/a
Lutetium	175	1.401	1.485	1.458	**1.401**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-05**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:47**					
Arsenic	75	31.78	33.59	33.98	**33.12**	1.175	3.547
Beryllium	9	0.0334	0.0667	0.0463	**0.0488**	0.0168	34.43
Cadmium	111	0.4162	0.4068	0.3996	**0.4075**	0.0083	2.036
Cadmium	114	0.4496	0.453	0.4578	**0.4535**	0.0041	0.9135
Chromium	52	2.581	2.536	2.583	**2.567**	0.0266	1.035
Chromium	53	6.212	6.044	6.401	**6.219**	0.1785	2.87
Cobalt	59	32.85	32.57	32.98	**32.8**	0.2108	0.6427
Copper	63	5.384	5.282	5.483	**5.383**	0.1005	1.867
Copper	65	2.371	2.305	2.39	**2.355**	0.0444	1.884
Lead	206	0.1224	0.123	0.1205	**0.122**	0.0013	1.068
Lead	207	0.1069	0.1111	0.1123	**0.1101**	0.0029	2.591
Lead	208	0.1208	0.1214	0.1201	**0.1208**	0.0006	0.5269
Molybdenum	95	8.139	8.05	7.945	**8.045**	0.0971	1.207
Molybdenum	97	8.136	7.735	7.913	**7.928**	0.2011	2.536
Molybdenum	98	7.779	7.665	7.864	**7.769**	0.0997	1.283
Nickel	60	84.05	82.74	83.61	**83.47**	0.6634	0.7948
Nickel	62	89.26	92.06	91.77	**91.03**	1.537	1.688
Selenium	77	4.395	2.86	3.155	**3.47**	0.814	23.46
Selenium	78	1.496	1.675	1.481	**1.551**	0.1076	6.937
Selenium	82	3.878	3.719	3.088	**3.562**	0.4177	11.73
Silver	107	0.0541	0.0469	0.0327	**0.0445**	0.0109	24.39
Silver	109	0.0429	0.0406	0.0366	**0.04**	0.0032	7.975
Thallium	203	0.4829	0.4986	0.4989	**0.4934**	0.0091	1.851
Thallium	205	0.4958	0.5059	0.5063	**0.5027**	0.006	1.186
~~Zinc~~	~~66~~	~~512.1~~	~~508.2~~	~~513~~	~~**511.1**~~	~~2.578~~	~~0.5045~~
Zinc	67	467.9	473.2	473.1	**471.4**	3.018	0.6402
Zinc	68	504.4	511.2	511.1	**508.9**	3.896	0.7656

* see Dilution JC ~~1/3/05~~ 1/3/05
JC
1/3/05

Internal Standard Factors:

Lithium	6	1.621	1.629	1.605	**1.621**	n/a	n/a
Scandium	45	1.371	1.442	1.464	**1.371**	n/a	n/a
Nickel	61	2.543	2.678	2.76	**2.543**	n/a	n/a
Indium	115	1.495	1.501	1.506	**1.495**	n/a	n/a
Lutetium	175	1.405	1.458	1.447	**1.405**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-06**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 11:50**					
Arsenic	75	21.99	22.36	21.66	**22**	0.3498	1.59
Beryllium	9	0.2358	0.2158	0.2069	**0.2195**	0.0148	6.761
Cadmium	111	0.0106	0.0166	0.0039	**0.0104**	0.0063	61.14
Cadmium	114	0.1932	0.1861	0.1988	**0.1927**	0.0064	3.308
Chromium	52	62.04	60.91	62.67	**61.87**	0.8924	1.442
Chromium	53	61.68	60.95	61.18	**61.27**	0.3756	0.613
Cobalt	59	1.016	1.01	0.9917	**1.006**	0.0128	1.274
Copper	63	3.818	3.878	3.848	**3.848**	0.0302	0.7843
Copper	65	3.651	3.722	3.578	**3.65**	0.0721	1.974
Lead	206	2.052	2.006	2.045	**2.034**	0.0252	1.238
Lead	207	2.199	2.099	2.177	**2.158**	0.0523	2.422
Lead	208	2.161	2.073	2.155	**2.13**	0.0495	2.322
Molybdenum	95	1.526	1.465	1.443	**1.478**	0.0427	2.888
Molybdenum	97	1.586	1.449	1.507	**1.514**	0.0689	4.55
Molybdenum	98	1.342	1.303	1.336	**1.327**	0.021	1.578
Nickel	60	208.2	219.7	209.7	**212.5**	6.234	2.933
Nickel	62	220.3	226.7	229.4	**225.4**	4.681	2.076
Selenium	77	4.956	4.129	3.95	**4.345**	0.5367	12.35
Selenium	78	1.401	0.8569	1.471	**1.243**	0.3364	27.06
Selenium	82	11.3	10.4	10.89	**10.86**	0.4484	4.128
Silver	107	0.0055	0.0016	-0.0026	**0.0015**	0.004	271.5
Silver	109	0.0081	0.0094	0.0084	**0.0086**	0.0007	7.964
Thallium	203	0.0119	0.0059	0.0127	**0.0102**	0.0037	36.8
Thallium	205	0.0107	0.0077	0.0069	**0.0084**	0.002	23.6
~~Zinc~~	~~66~~	~~10330~~	~~10390~~	~~9805~~	~~**10210**~~	~~271.5~~	~~2.66~~
Zinc	67	9173	8921	8871	**8989**	161.6	1.798
Zinc	68	10330	9907	9973	**10070**	225	2.234

*see Dilution JC 1/3/05

Internal Standard Factors:							
Lithium	6	1.683	1.628	1.565	**1.683**	n/a	n/a
Scandium	45	1.453	1.522	1.463	**1.453**	n/a	n/a
Nickel	61	2.347	2.541	2.374	**2.347**	n/a	n/a
Indium	115	1.414	1.397	1.364	**1.414**	n/a	n/a
Lutetium	175	1.319	1.331	1.332	**1.319**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05B
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405665

Sample Name:		**K9068-02 1/2**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 12:02**					
Arsenic	75	38.99	40.36	40.03	**39.79**	0.716	1.799
Beryllium	9	0.0932	0.065	0.0593	**0.0725**	0.0182	25.09
Cadmium	111	0.0105	0.0446	0.0229	**0.026**	0.0173	66.5
Cadmium	114	0.046	0.0417	0.0457	**0.0444**	0.0024	5.407
Chromium	52	2.65	2.498	2.475	**2.541**	0.0953	3.75
Chromium	53	4.144	4.581	4.262	**4.329**	0.2257	5.215
Cobalt	59	21.96	22.09	21.31	**21.79**	0.4198	1.927
Copper	63	2.355	2.333	2.336	**2.342**	0.0119	0.5087
Copper	65	0.6428	0.616	0.6128	**0.6238**	0.0165	2.64
Lead	206	0.0622	0.0724	0.0697	**0.0681**	0.0053	7.763
Lead	207	0.0643	0.0769	0.0745	**0.0719**	0.0067	9.308
Lead	208	0.0673	0.0731	0.072	**0.0708**	0.003	4.299
Molybdenum	95	8.914	9.45	9.044	**9.136**	0.2796	3.06
Molybdenum	97	8.966	9.416	9.022	**9.135**	0.2453	2.685
Molybdenum	98	8.888	9.144	8.808	**8.946**	0.1756	1.963
~~Nickel~~	~~60~~	~~34.18~~	~~32.86~~	~~32.17~~	~~**33.07**~~	~~1.008~~	~~3.049~~
Nickel	62	37.76	37.53	38.51	**37.93**	0.5148	1.357
Selenium	77	1.966	1.623	1.92	**1.836**	0.1863	10.15
Selenium	78	0.9001	1.133	0.7758	**0.9362**	0.1812	19.35
Selenium	82	3.821	3.028	3.851	**3.567**	0.4665	13.08
Silver	107	0.044	0.0417	0.0565	**0.0474**	0.0079	16.75
Silver	109	0.0328	0.0386	0.0333	**0.0349**	0.0032	9.133
Thallium	203	0.0016	0.0013	0.0024	**0.0018**	0.0006	32.66
Thallium	205	0.0011	0.0022	-0.0005	**0.001**	0.0014	142.8
Zinc	66	111.9	115.7	113.6	**113.7**	1.942	1.708
Zinc	67	113.2	112.5	106	**110.6**	3.966	3.587
Zinc	68	121	119.5	117.1	**119.2**	1.965	1.649

*see Run with no Dilution JC 1/3/05

Internal Standard Factors:							
Lithium	6	1.633	1.611	1.545	**1.633**	n/a	n/a
Scandium	45	1.543	1.6	1.508	**1.543**	n/a	n/a
Nickel	61	2.112	2.098	2.017	**2.112**	n/a	n/a
Indium	115	1.646	1.667	1.604	**1.646**	n/a	n/a
Lutetium	175	1.544	1.574	1.53	**1.544**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**K9068-04 1/2**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 13:35**					
Arsenic	75	38.06	38.07	36.78	**37.64**	0.7394	1.964
Beryllium	9	0.0234	0.0417	0.0408	**0.0353**	0.0103	29.19
Cadmium	111	0.0627	0.0775	0.0619	**0.0674**	0.0088	13.05
Cadmium	114	0.0944	0.0961	0.0849	**0.0918**	0.006	6.568
Chromium	52	2.219	2.205	2.172	**2.199**	0.0241	1.094
Chromium	53	4.061	4.195	4.097	**4.117**	0.0691	1.679
Cobalt	59	30.94	30.46	29.98	**30.46**	0.4823	1.584
Copper	63	2.659	2.64	2.571	**2.623**	0.0464	1.769
Copper	65	1.162	1.147	1.146	**1.152**	0.0088	0.7667
Lead	206	0.7028	0.6765	0.6872	**0.6888**	0.0132	1.921
Lead	207	0.7278	0.754	0.7158	**0.7326**	0.0195	2.668
Lead	208	0.7295	0.7145	0.7253	**0.7231**	0.0077	1.071
Molybdenum	95	7.699	7.757	7.581	**7.679**	0.0899	1.171
Molybdenum	97	7.886	7.858	7.731	**7.825**	0.0821	1.05
Molybdenum	98	7.793	7.663	7.55	**7.669**	0.1214	1.583
~~Nickel~~	~~60~~	~~37.29~~	~~37.23~~	~~37.35~~	~~**37.29**~~	~~0.059~~	~~0.1582~~ X
Nickel	62	38.9	38.16	39.29	**38.78**	0.5767	1.487
Selenium	77	5.268	3.971	3.175	**4.138**	1.056	25.53
Selenium	78	-0.3191	-0.7627	-0.7943	**-0.6253**	0.2657	42.49
Selenium	82	2.884	3.152	3.079	**3.038**	0.1389	4.571
Silver	107	0.0571	0.0644	0.061	**0.0608**	0.0037	6.031
Silver	109	0.0559	0.0505	0.0539	**0.0534**	0.0028	5.185
Thallium	203	0.0053	0.0079	0.0056	**0.0063**	0.0014	22.49
Thallium	205	0.0032	0.0022	0.0027	**0.0027**	0.0005	17
Zinc	66	150.8	146.9	145.5	**147.7**	2.734	1.851
Zinc	67	142.9	141.9	138.3	**141**	2.432	1.724
Zinc	68	149.4	150.2	145.1	**148.2**	2.768	1.867

X see sample run with no Dilution
JC 1/3/05

Internal Standard Factors:							
Lithium	6	1.302	1.307	1.283	**1.302**	n/a	n/a
Scandium	45	1.131	1.152	1.124	**1.131**	n/a	n/a
Nickel	61	1.294	1.321	1.338	**1.294**	n/a	n/a
Indium	115	1.192	1.173	1.163	**1.192**	n/a	n/a
Lutetium	175	1.081	1.066	1.069	**1.081**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**K9068-05 1/10**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 13:39**					
Arsenic	75	3.861	3.81	3.77	**3.814**	0.0454	1.191
Beryllium	9	0.0052	0.0082	0.0073	**0.0069**	0.0015	22.11
Cadmium	111	0.1045	0.0841	0.0823	**0.0903**	0.0124	13.71
Cadmium	114	0.0851	0.0874	0.0863	**0.0863**	0.0011	1.329
Chromium	52	0.2778	0.3013	0.2716	**0.2836**	0.0157	5.523
Chromium	53	2.963	3.114	2.833	**2.97**	0.141	4.749
Cobalt	59	3.916	3.954	3.897	**3.923**	0.0291	0.7408
Copper	63	0.6204	0.6257	0.6006	**0.6156**	0.0132	2.151
Copper	65	0.3302	0.3286	0.316	**0.3249**	0.0078	2.392
Lead	206	0.0259	0.0203	0.0246	**0.0236**	0.0029	12.45
Lead	207	0.0234	0.0112	0.0239	**0.0195**	0.0072	36.79
Lead	208	0.0232	0.0215	0.0239	**0.0229**	0.0012	5.263
Molybdenum	95	0.8235	0.8095	0.8099	**0.8143**	0.0079	0.9759
Molybdenum	97	0.8442	0.8369	0.8343	**0.8385**	0.0051	0.6102
Molybdenum	98	0.8315	0.7964	0.7879	**0.8053**	0.0231	2.865
Nickel	60	5.791	6.239	6.158	**6.063**	0.2386	3.935
Nickel	62	6.17	6.259	6.834	**6.421**	0.3607	5.618
Selenium	77	1.979	1.285	1.951	**1.739**	0.3927	22.59
Selenium	78	-0.675	-0.638	-0.7535	**-0.6888**	0.059	8.559
Selenium	82	0.5284	0.3362	0.3531	**0.4059**	0.1064	26.21
Silver	107	0.0104	0.0158	0.0089	**0.0117**	0.0036	30.93
Silver	109	0.0102	0.0095	0.0134	**0.011**	0.0021	18.67
Thallium	203	0.0639	0.0641	0.0572	**0.0617**	0.004	6.41
Thallium	205	0.0557	0.0558	0.0556	**0.0557**	0.0001	0.1816
~~Zinc~~	~~66~~	69.46	69.35	66.96	**68.59**	1.412	2.058
~~Zinc~~	~~67~~	62.33	63.78	60.92	**62.34**	1.435	2.301
Zinc	68	66.86	66.46	64.47	**65.93**	1.277	1.936

Internal Standard Factors:							
Lithium	6	1.058	1.111	1.099	**1.058**	n/a	n/a
Scandium	45	1.047	1.101	1.093	**1.047**	n/a	n/a
Nickel	61	1.095	1.184	1.188	**1.095**	n/a	n/a
Indium	115	1.068	1.102	1.098	**1.068**	n/a	n/a
Lutetium	175	0.998	1.021	1.027	**0.998**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**K9068-06 1/100**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 13:42**					
Arsenic	75	0.2891	0.4862	0.2748	**0.35**	0.1182	33.75
Beryllium	9	0.0018	0.0026	0.0074	**0.0039**	0.003	76.57
Cadmium	111	0.015	-0.0006	0.0134	**0.0093**	0.0086	92.17
Cadmium	114	0.004	0.0039	0.0057	**0.0045**	0.001	22.77
Chromium	52	0.7464	0.7451	0.7426	**0.7447**	0.002	0.2627
Chromium	53	4.482	3.995	4.144	**4.207**	0.2496	5.933
Cobalt	59	0.013	0.0141	0.0117	**0.0129**	0.0012	9.004
Copper	63	0.0582	0.0464	0.0533	**0.0527**	0.006	11.31
Copper	65	0.0799	0.0651	0.0696	**0.0715**	0.0076	10.63
Lead	206	0.0325	0.03	0.0289	**0.0305**	0.0018	6.066
Lead	207	0.0284	0.0282	0.0208	**0.0258**	0.0043	16.85
Lead	208	0.0293	0.032	0.0259	**0.0291**	0.003	10.47
Molybdenum	95	0.0164	0.0211	0.0134	**0.017**	0.0039	22.89
Molybdenum	97	0.0236	0.0336	0.0397	**0.0323**	0.0081	25.04
Molybdenum	98	0.0151	0.0165	0.0165	**0.016**	0.0008	4.977
Nickel	60	1.397	1.64	1.744	**1.593**	0.1779	11.17
Nickel	62	1.672	1.573	1.93	**1.725**	0.1843	10.68
Selenium	77	1.942	1.662	2.778	**2.128**	0.5809	27.3
Selenium	78	-0.7496	-0.8606	-0.658	**-0.7561**	0.1015	13.42
Selenium	82	0.1444	0.1914	0.0922	**0.1427**	0.0496	34.79
Silver	107	0.0046	0.0132	0.011	**0.0096**	0.0045	46.33
Silver	109	0.0117	0.0122	0.01	**0.0113**	0.0012	10.47
Thallium	203	0.0024	0.0052	0.0039	**0.0038**	0.0014	36.34
Thallium	205	0.0024	0.0027	0.0037	**0.0029**	0.0007	23.13
Zinc	66	132.9	130.1	131.7	**131.6**	1.429	1.086
Zinc	67	125.6	123.8	121.7	**123.7**	1.913	1.546
Zinc	68	134.2	131.7	130.9	**132.3**	1.697	1.283

Internal Standard Factors:

Lithium	6	1.067	1.077	1.064	**1.067**	n/a	n/a
Scandium	45	1.066	1.097	1.1	**1.066**	n/a	n/a
Nickel	61	1.061	1.111	1.113	**1.061**	n/a	n/a
Indium	115	1.073	1.091	1.083	**1.073**	n/a	n/a
Lutetium	175	1.031	1.038	1.036	**1.031**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**K9815-01**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 13:46**					
Arsenic	75	14.85	15.2	14.11	**14.72**	0.5552	3.772
Beryllium	9	0.0317	0.0297	0.0375	**0.033**	0.0041	12.36
Cadmium	111	0.1519	0.1856	0.1541	**0.1639**	0.0188	11.5
Cadmium	114	10.39	10.33	10.43	**10.38**	0.0505	0.4866
Chromium	52	2.345	2.305	2.319	**2.323**	0.0203	0.8741
Chromium	53	6.3	6.019	5.685	**6.002**	0.3079	5.131
Cobalt	59	0.2644	0.2532	0.2438	**0.2538**	0.0103	4.075
Copper	63	10.18	10.06	9.926	**10.06**	0.1288	1.281
Copper	65	8.777	8.337	8.337	**8.483**	0.2541	2.996
Lead	206	1.975	1.973	1.99	**1.98**	0.0093	0.4684
Lead	207	2.013	1.988	2.005	**2.002**	0.0127	0.6342
Lead	208	2.031	2.009	2.015	**2.019**	0.0115	0.5711
Molybdenum	95	15.65	15.96	15.44	**15.68**	0.2614	1.667
Molybdenum	97	15.99	15.72	15.93	**15.88**	0.1392	0.8764
Molybdenum	98	15.72	15.7	15.37	**15.6**	0.1951	1.251
Nickel	60	4.012	4.007	3.592	**3.87**	0.2414	6.237
Nickel	62	6.496	6.807	6.973	**6.759**	0.242	3.58
Selenium	77	2.49	1.661	1.717	**1.956**	0.4632	23.68
Selenium	78	-0.5238	-0.1021	-0.2195	**-0.2818**	0.2177	77.24
Selenium	82	2.543	2.229	1.874	**2.215**	0.3347	15.11
Silver	107	1.037	1.033	1.008	**1.026**	0.0157	1.525
Silver	109	0.9979	1.021	0.9861	**1.002**	0.0176	1.761
Thallium	203	0.192	0.2057	0.1949	**0.1975**	0.0073	3.678
Thallium	205	0.1923	0.1883	0.1931	**0.1912**	0.0026	1.361
Zinc	66	11.47	10.67	11.02	**11.05**	0.4002	3.62
Zinc	67	10.72	11.07	10.59	**10.79**	0.2484	2.301
Zinc	68	10.23	10.63	10.15	**10.34**	0.2558	2.474

Internal Standard Factors:							
Lithium	6	1.15	1.182	1.145	**1.15**	n/a	n/a
Scandium	45	1.164	1.184	1.148	**1.164**	n/a	n/a
Nickel	61	1.348	1.418	1.362	**1.348**	n/a	n/a
Indium	115	1.111	1.126	1.097	**1.111**	n/a	n/a
Lutetium	175	1.042	1.05	1.036	**1.042**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**PBW K9582**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 14:00**					
Arsenic	75	0.1194	0.0888	0.2081	**0.1388**	0.062	44.66
Beryllium	9	-0.0025	0.0003	0.0029	**0.0002**	0.0027	1201
Cadmium	111	0.0024	0.0044	-0.0047	**0.0007**	0.0048	669.9
Cadmium	114	-0.0019	-0.0005	-0.0014	**-0.0012**	0.0007	56.7
Chromium	52	0.0321	0.032	0.0364	**0.0335**	0.0025	7.525
Chromium	53	4.649	4.069	4.215	**4.311**	0.302	7.005
Cobalt	59	-0.0004	0.0001	-0.0014	**-0.0005**	0.0008	147.3
Copper	63	-0.0154	-0.0152	-0.0114	**-0.014**	0.0022	15.81
Copper	65	0.0069	-0.003	-0.0034	**0.0002**	0.0058	3393
Lead	206	0.002	-0.0009	0.0014	**0.0008**	0.0015	177.4
Lead	207	-0.0002	-0.0005	0	**-0.0002**	0.0002	97.85
Lead	208	0.0031	0.0013	0.0023	**0.0022**	0.0009	41.97
Molybdenum	95	0.0018	-0.0038	0.0004	**-0.0005**	0.0029	532.9
Molybdenum	97	-0.004	0.0058	-0.0131	**-0.0038**	0.0094	249.3
Molybdenum	98	0.0006	-0.0005	-0.0005	**-0.0001**	0.0006	416.2
Nickel	60	0.1156	0.1961	0.5465	**0.2861**	0.2291	80.07
Nickel	62	0.1248	0.3271	0.8941	**0.4486**	0.3988	88.89
Selenium	77	1.454	1.619	1.488	**1.521**	0.0872	5.736
Selenium	78	-0.5478	-0.5462	-0.7657	**-0.6199**	0.1263	20.37
Selenium	82	0.1847	-0.0893	0.1099	**0.0684**	0.1416	207.1
Silver	107	0.0053	0.0034	0.0022	**0.0036**	0.0015	42.31
Silver	109	0.0051	0.0066	0.0055	**0.0057**	0.0008	13.83
Thallium	203	0.0039	0.0021	-0.0015	**0.0015**	0.0027	185.6
Thallium	205	-0.0006	0.0003	-0.0004	**-0.0002**	0.0005	213.5
Zinc	66	-0.002	-0.0113	-0.0016	**-0.005**	0.0055	109.9
Zinc	67	0.5343	0.4798	0.4208	**0.4783**	0.0568	11.87
Zinc	68	-0.023	-0.0277	0.0167	**-0.0113**	0.0244	215.6

Internal Standard Factors:

Lithium	6	1.052	1.059	1.042	**1.052**	n/a	n/a
Scandium	45	1.121	1.115	1.096	**1.121**	n/a	n/a
Nickel	61	1.179	1.215	1.222	**1.179**	n/a	n/a
Indium	115	1.097	1.098	1.085	**1.097**	n/a	n/a
Lutetium	175	1.066	1.038	1.031	**1.066**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**K9463-04 USE FOR BQC**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 14:12**					
Arsenic	75	7.969	7.843	8.261	**8.024**	0.2145	2.673
Beryllium	9	0.0051	0.0071	0.0062	**0.0061**	0.001	16.03
Cadmium	111	0.1723	0.1739	0.1549	**0.1671**	0.0105	6.298
Cadmium	114	0.1915	0.1837	0.1938	**0.1896**	0.0053	2.781
Chromium	52	2.662	2.664	2.693	**2.673**	0.0172	0.6428
Chromium	53	7.327	7.349	7.497	**7.391**	0.0924	1.25
Cobalt	59	0.1242	0.1168	0.1121	**0.1177**	0.0061	5.189
Copper	63	14.82	14.63	14.46	**14.64**	0.1823	1.245
Copper	65	12.42	12.51	12.37	**12.43**	0.0716	0.5757
Lead	206	4.744	4.571	4.692	**4.669**	0.0887	1.901
Lead	207	4.943	4.726	4.996	**4.889**	0.1431	2.928
Lead	208	4.86	4.755	4.886	**4.834**	0.0693	1.433
Molybdenum	95	16.59	16.54	16.84	**16.66**	0.1597	0.9588
Molybdenum	97	17	16.98	17.01	**17**	0.0126	0.0739
Molybdenum	98	16.65	16.66	17.03	**16.78**	0.2173	1.295
Nickel	60	2.638	2.572	2.658	**2.623**	0.045	1.716
Nickel	62	5.679	5.48	5.614	**5.591**	0.1013	1.813
Selenium	77	3.511	2.755	2.379	**2.881**	0.5766	20.01
Selenium	78	-0.1369	-0.1687	0.1218	**-0.0613**	0.1593	259.9
Selenium	82	2.297	2.08	2.149	**2.175**	0.1111	5.108
Silver	107	0.3749	0.3641	0.3784	**0.3725**	0.0075	2.007
Silver	109	0.3703	0.3689	0.3789	**0.3727**	0.0054	1.442
Thallium	203	0.1186	0.1199	0.1289	**0.1224**	0.0056	4.583
Thallium	205	0.1181	0.1095	0.1174	**0.115**	0.0048	4.168
Zinc	66	18.77	18.64	18.84	**18.75**	0.1005	0.5358
Zinc	67	18.05	17.46	17.43	**17.65**	0.3503	1.985
Zinc	68	17.89	17.52	17.55	**17.65**	0.2077	1.177

Internal Standard Factors:

Lithium	6	1.285	1.305	1.302	**1.285**	n/a	n/a
Scandium	45	1.244	1.259	1.263	**1.244**	n/a	n/a
Nickel	61	1.585	1.603	1.618	**1.585**	n/a	n/a
Indium	115	1.231	1.211	1.226	**1.231**	n/a	n/a
Lutetium	175	1.127	1.096	1.105	**1.127**	n/a	n/a

Instrument ID: Thermo Elemental Excell | **Method: EPA 200.8**
Experiment: 01-03-05C | **Analyst: Jim Chan**
Units: µg/L (ppb) | **Analysis Lot # : KA0405666**

Sample Name:		**K9463-04S USE FOR BQC**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 14:15**					
Arsenic	75	25.46	25.05	24.78	**25.1**	0.3434	1.368
Beryllium	9	10.2	10.36	10.1	**10.22**	0.13	1.272
Cadmium	111	17.76	17.23	17.41	**17.47**	0.2698	1.544
Cadmium	114	17.74	16.96	17.39	**17.37**	0.3926	2.261
Chromium	52	20.99	20.73	20.79	**20.84**	0.1342	0.6441
Chromium	53	26.07	24.94	26.13	**25.71**	0.6689	2.602
Cobalt	59	13.6	13.25	13.37	**13.41**	0.1783	1.33
Copper	63	31.65	30.76	30.55	**30.98**	0.5843	1.886
Copper	65	29.47	28.22	28.76	**28.82**	0.6291	2.183
Lead	206	22.66	22.29	23.06	**22.67**	0.387	1.707
Lead	207	23.11	22.73	23.38	**23.07**	0.3288	1.425
Lead	208	22.98	22.55	23.12	**22.88**	0.2956	1.292
Molybdenum	95	23.76	23.03	24	**23.6**	0.5069	2.148
Molybdenum	97	24.05	23.9	24.02	**23.99**	0.0816	0.3401
Molybdenum	98	23.7	23.66	23.62	**23.66**	0.0402	0.17
Nickel	60	23.54	23.16	23.37	**23.36**	0.1921	0.8223
Nickel	62	26.9	26.17	27.31	**26.8**	0.5767	2.152
Selenium	77	18.89	18.74	18.79	**18.81**	0.0794	0.4221
Selenium	78	17.1	16.27	16.69	**16.68**	0.415	2.488
Selenium	82	18.47	17.6	18.04	**18.03**	0.4326	2.399
Silver	107	17.31	16.65	16.79	**16.92**	0.3485	2.06
Silver	109	17.22	16.92	17.19	**17.11**	0.1683	0.9836
Thallium	203	17.39	17.08	17.54	**17.33**	0.2335	1.347
Thallium	205	17.17	16.96	17.6	**17.24**	0.329	1.908
Zinc	66	36.23	34.39	34.87	**35.17**	0.9564	2.72
Zinc	67	33.07	31.82	31.85	**32.25**	0.7113	2.206
Zinc	68	33.32	32.29	32.67	**32.76**	0.5203	1.588

Internal Standard Factors:							
Lithium	6	1.344	1.379	1.336	**1.344**	n/a	n/a
Scandium	45	1.252	1.293	1.304	**1.252**	n/a	n/a
Nickel	61	1.522	1.608	1.618	**1.522**	n/a	n/a
Indium	115	1.219	1.219	1.234	**1.219**	n/a	n/a
Lutetium	175	1.102	1.114	1.142	**1.102**	n/a	n/a

Instrument ID: Thermo Elemental Excell
Experiment: 01-03-05C
Units: µg/L (ppb)

Method: EPA 200.8
Analyst: Jim Chan
Analysis Lot # : KA0405666

Sample Name:		**K9463-04SD USE FOR BQC**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 14:19**					
Arsenic	75	26.1	26.64	26.69	**26.48**	0.3278	1.238
Beryllium	9	12.61	12.93	11.84	**12.46**	0.5573	4.473
Cadmium	111	18.62	18.06	18.47	**18.39**	0.2918	1.587
Cadmium	114	18.6	18.07	18.22	**18.3**	0.2754	1.505
Chromium	52	21.29	21.18	21.66	**21.37**	0.2507	1.173
Chromium	53	24.75	24.33	25.27	**24.78**	0.4734	1.91
Cobalt	59	15.46	15.36	15.85	**15.56**	0.2587	1.663
Copper	63	32.39	32.51	33.21	**32.7**	0.4412	1.349
Copper	65	29.99	30.01	31.08	**30.36**	0.6257	2.061
Lead	206	23.45	23.15	23.2	**23.27**	0.1601	0.688
Lead	207	23.6	23.77	23.64	**23.67**	0.0906	0.3829
Lead	208	23.39	23.37	23.52	**23.43**	0.081	0.3457
Molybdenum	95	17.34	17.05	17.31	**17.24**	0.1636	0.9495
Molybdenum	97	17.55	17.28	17.22	**17.35**	0.1766	1.018
Molybdenum	98	17.3	17.13	17.05	**17.16**	0.1273	0.7421
Nickel	60	23.72	23.75	23.9	**23.79**	0.0944	0.3967
Nickel	62	26.79	26.7	28.06	**27.18**	0.7591	2.793
Selenium	77	19.12	17.22	19.9	**18.74**	1.374	7.332
Selenium	78	18.03	17.42	17.84	**17.76**	0.3143	1.769
Selenium	82	19.16	18.68	19.11	**18.99**	0.2622	1.381
Silver	107	26.32	25.64	26.53	**26.16**	0.4642	1.774
Silver	109	26.6	26.07	26.85	**26.51**	0.3972	1.499
Thallium	203	18.33	18.64	18.49	**18.49**	0.1568	0.8482
Thallium	205	18.39	18.53	18.49	**18.47**	0.0723	0.3915
Zinc	66	36.89	36.66	38.02	**37.19**	0.727	1.955
Zinc	67	34.11	32.86	34.64	**33.87**	0.9146	2.701
Zinc	68	33.23	33.87	34.03	**33.71**	0.4229	1.255

Internal Standard Factors:							
Lithium	6	1.343	1.38	1.249	**1.343**	n/a	n/a
Scandium	45	1.263	1.299	1.24	**1.263**	n/a	n/a
Nickel	61	1.55	1.609	1.482	**1.55**	n/a	n/a
Indium	115	1.228	1.219	1.191	**1.228**	n/a	n/a
Lutetium	175	1.132	1.138	1.076	**1.132**	n/a	n/a

Instrument ID: Thermo Elemental Excell | **Method: EPA 200.8**
Experiment: 01-03-05C | **Analyst: Jim Chan**
Units: µg/L (ppb) | **Analysis Lot # : KA0405666**

Sample Name:		**K9582-01**			**Mean**	**SD**	**%RSD**
TimeStamp		**1/3/05 14:32**					
Arsenic	75	10.28	10.27	10.03	**10.19**	0.1434	1.407
Beryllium	9	0.016	0.0156	0.0153	**0.0156**	0.0004	2.303
Cadmium	111	0.4247	0.4357	0.42	**0.4268**	0.008	1.885
Cadmium	114	0.4495	0.4571	0.4392	**0.4486**	0.009	2.004
Chromium	52	1.043	1.084	1.039	**1.055**	0.0248	2.352
Chromium	53	3.127	2.87	2.477	**2.825**	0.3272	11.58
Cobalt	59	0.2345	0.2268	0.2296	**0.2303**	0.0039	1.677
Copper	63	4.048	4.005	3.964	**4.006**	0.0422	1.053
Copper	65	2.643	2.552	2.509	**2.568**	0.0682	2.657
Lead	206	0.2302	0.2113	0.2265	**0.2227**	0.01	4.506
Lead	207	0.2352	0.2198	0.2316	**0.2289**	0.0081	3.529
Lead	208	0.2328	0.2221	0.2334	**0.2294**	0.0063	2.766
Molybdenum	95	10.86	10.98	10.89	**10.91**	0.0631	0.5787
Molybdenum	97	10.8	11.09	11.01	**10.97**	0.1485	1.354
Molybdenum	98	10.72	10.82	10.75	**10.77**	0.0523	0.4862
Nickel	60	4.656	4.455	4.705	**4.605**	0.1325	2.877
Nickel	62	6.472	6.641	6.455	**6.523**	0.1027	1.575
Selenium	77	1.855	1.087	1.22	**1.387**	0.4105	29.6
Selenium	78	0.885	0.5026	0.5374	**0.6417**	0.2114	32.95
Selenium	82	1.808	1.622	1.084	**1.505**	0.376	24.99
Silver	107	0.5076	0.527	0.5098	**0.5148**	0.0106	2.063
Silver	109	0.5192	0.4933	0.5021	**0.5049**	0.0131	2.602
Thallium	203	0.1243	0.1407	0.124	**0.1297**	0.0095	7.356
Thallium	205	0.126	0.131	0.1207	**0.1259**	0.0051	4.087
Zinc	66	9.128	9.202	9.126	**9.152**	0.0435	0.4747
Zinc	67	8.855	8.806	8.518	**8.727**	0.182	2.086
Zinc	68	8.742	8.523	8.205	**8.49**	0.2699	3.179

Internal Standard Factors:

Lithium	6	1.238	1.257	1.243	**1.238**	n/a	n/a
Scandium	45	1.227	1.237	1.251	**1.227**	n/a	n/a
Nickel	61	1.511	1.528	1.574	**1.511**	n/a	n/a
Indium	115	1.256	1.263	1.25	**1.256**	n/a	n/a
Lutetium	175	1.128	1.119	1.124	**1.128**	n/a	n/a

Butyltins

Organic Analysis:
Butyltins (as cation)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409815

Cover Page - Organic Analysis Data Package
Butyltins (as cation)

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-Reference Water	K2409815-001	12/08/2004	12/11/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: 1/4/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: 12/08/2004
Date Received: 12/11/2004

Butyltins (as cation)

Sample Name: E-KB04-Reference Water
Lab Code: K2409815-001

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: Krone

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/13/04	12/18/04	KWG0419713	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/13/04	12/18/04	KWG0419713	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/13/04	12/18/04	KWG0419713	
n-Butyltin	**0.015**	J	0.050	0.0047	1	12/13/04	12/18/04	KWG0419713	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	97	19-146	12/18/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	PPB Environmental	**Service Request:**	K2409815
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Butyltins (as cation)

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0419713-3	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	Krone		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Tetra-n-butyltin	ND	U	0.050	0.0032	1	12/13/04	12/18/04	KWG0419713	
Tri-n-butyltin	ND	U	0.020	0.0071	1	12/13/04	12/18/04	KWG0419713	
Di-n-butyltin	ND	U	0.050	0.0050	1	12/13/04	12/18/04	KWG0419713	
n-Butyltin	ND	U	0.050	0.0047	1	12/13/04	12/18/04	KWG0419713	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tri-n-propyltin	108	19-146	12/18/04	Acceptable

Comments:

Oil & Grease
EPA Method 1664

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409815
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	12/8/2004
Sample Matrix:	Water	**Date Received:**	12/11/2004

Oil and Grease

Sample Name:	E-KB04-Reference Water	Units:	mg/L (ppm)
Lab Code:	K2409815-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	12/20/2004	12/20/2004	ND	

Approved By: _____ Date: 122204

1S22/020597p

09815PHC.cq1 - 1 12/22/2004

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	PPB Environmental	**Service Request:**	K2409815
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Oil and Grease

Sample Name:	Method Blank	Units:	mg/L (ppm)
Lab Code:	K041220-WB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Oil and Grease, Total (HEM)	METHOD	1664	5.0	0.64	1	12/20/2004	12/20/2004	ND	

Approved By: _____ Date: 122204

1S22/020597p

09815PHC.cq1 - MB 12/22/2004

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	PPB Environmental	**Service Request:**	K2409815
Project:	PPB-USACE King's Bay 2004	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	12/20/2004
		Date Analyzed:	12/20/2004

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Oil and Grease

Sample Name:	Lab Control Sample	Units:	mg/L (ppm)
Lab Code:	K041220-WL1, K041220-WL2	Basis:	NA
Test Notes:			

							Percent Recovery				
									CAS	Relative	
	Prep	Analysis	True Value		Result				Acceptance	Percent	Result
Analyte	**Method**	**Method**	LCS	DLCS	LCS	DLCS	LCS	DLCS	Limits	**Difference**	**Notes**
Oil and Grease, Total (HEM)	METHOD	1664	40	40	35.7	38.7	89	97	78-114	9	

Approved By: _____ Date: 122204

DLCS/072898p
09815PHC.cq1 - DLCS 12/22/2004

Page No.:

Organochlorine Pesticides
EPA Method 8081

Organic Analysis:
Organochlorine Pesticides

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409815

Cover Page - Organic Analysis Data Package
Organochlorine Pesticides

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-Reference Water	K2409815-001	12/08/2004	12/11/2004

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Signature: _____ Name: Todd [illegible]

Date: 1/3/05 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: 12/08/2004
Date Received: 12/11/2004

Organochlorine Pesticides

Sample Name: E-KB04-Reference Water
Lab Code: K2409815-001

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.010	0.0011	1	12/15/04	12/21/04	KWG0419840	
beta-BHC	ND	U	0.010	0.0029	1	12/15/04	12/21/04	KWG0419840	
gamma-BHC (Lindane)	ND	U	0.010	0.00076	1	12/15/04	12/21/04	KWG0419840	
delta-BHC	ND	U	0.010	0.0016	1	12/15/04	12/21/04	KWG0419840	
Heptachlor	ND	U	0.010	0.0011	1	12/15/04	12/21/04	KWG0419840	
Aldrin	ND	U	0.010	0.00087	1	12/15/04	12/21/04	KWG0419840	
Heptachlor Epoxide	ND	U	0.010	0.00060	1	12/15/04	12/21/04	KWG0419840	
Endosulfan I	ND	U	0.010	0.0012	1	12/15/04	12/21/04	KWG0419840	
Dieldrin	ND	U	0.010	0.0013	1	12/15/04	12/21/04	KWG0419840	
4,4'-DDE	ND	Ui	0.010	0.0018	1	12/15/04	12/21/04	KWG0419840	
Endrin	ND	U	0.010	0.00065	1	12/15/04	12/21/04	KWG0419840	
Endosulfan II	ND	U	0.010	0.0011	1	12/15/04	12/21/04	KWG0419840	
4,4'-DDD	ND	U	0.010	0.0019	1	12/15/04	12/21/04	KWG0419840	
Endrin Aldehyde	ND	U	0.010	0.0023	1	12/15/04	12/21/04	KWG0419840	
Endosulfan Sulfate	ND	U	0.010	0.0029	1	12/15/04	12/21/04	KWG0419840	
4,4'-DDT	ND	U	0.010	0.00064	1	12/15/04	12/21/04	KWG0419840	
Methoxychlor	ND	U	0.010	0.00090	1	12/15/04	12/21/04	KWG0419840	
Toxaphene	ND	U	0.50	0.037	1	12/15/04	12/21/04	KWG0419840	
Chlordane	ND	U	0.20	0.039	1	12/15/04	12/21/04	KWG0419840	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	83	17-128	12/21/04	Acceptable
Decachlorobiphenyl	107	10-136	12/21/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: NA
Date Received: NA

Organochlorine Pesticides

Sample Name: Method Blank
Lab Code: KWG0419840-5

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8081A

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.010	0.0011	1	12/15/04	12/21/04	KWG0419840	
beta-BHC	ND	U	0.010	0.0029	1	12/15/04	12/21/04	KWG0419840	
gamma-BHC (Lindane)	ND	U	0.010	0.00076	1	12/15/04	12/21/04	KWG0419840	
delta-BHC	ND	U	0.010	0.0016	1	12/15/04	12/21/04	KWG0419840	
Heptachlor	ND	U	0.010	0.0011	1	12/15/04	12/21/04	KWG0419840	
Aldrin	ND	U	0.010	0.00087	1	12/15/04	12/21/04	KWG0419840	
Heptachlor Epoxide	ND	U	0.010	0.00060	1	12/15/04	12/21/04	KWG0419840	
Endosulfan I	ND	U	0.010	0.0012	1	12/15/04	12/21/04	KWG0419840	
Dieldrin	ND	U	0.010	0.0013	1	12/15/04	12/21/04	KWG0419840	
4,4'-DDE	ND	U	0.010	0.0015	1	12/15/04	12/21/04	KWG0419840	
Endrin	ND	U	0.010	0.00065	1	12/15/04	12/21/04	KWG0419840	
Endosulfan II	ND	U	0.010	0.0011	1	12/15/04	12/21/04	KWG0419840	
4,4'-DDD	ND	Ui	0.010	0.010	1	12/15/04	12/21/04	KWG0419840	
Endrin Aldehyde	ND	U	0.010	0.0023	1	12/15/04	12/21/04	KWG0419840	
Endosulfan Sulfate	ND	U	0.010	0.0029	1	12/15/04	12/21/04	KWG0419840	
4,4'-DDT	**0.0011**	J	0.010	0.00064	1	12/15/04	12/21/04	KWG0419840	
Methoxychlor	ND	U	0.010	0.00090	1	12/15/04	12/21/04	KWG0419840	
Toxaphene	ND	U	0.50	0.037	1	12/15/04	12/21/04	KWG0419840	
Chlordane	ND	U	0.20	0.039	1	12/15/04	12/21/04	KWG0419840	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	79	17-128	12/21/04	Acceptable
Decachlorobiphenyl	115	10-136	12/21/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Extracted: 12/15/2004
Date Analyzed: 12/21/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Organochlorine Pesticides

Extraction Method: EPA 3535
Analysis Method: 8081A

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0419840

	Lab Control Sample KWG0419840-1 Lab Control Spike			Duplicate Lab Control Sample KWG0419840-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.187	0.200	94	0.189	0.200	95	56-132	1	30
beta-BHC	0.177	0.200	88	0.181	0.200	90	42-145	2	30
gamma-BHC (Lindane)	0.182	0.200	91	0.185	0.200	93	59-130	2	30
delta-BHC	0.207	0.200	103	0.210	0.200	105	57-142	2	30
Heptachlor	0.177	0.200	89	0.179	0.200	89	39-120	1	30
Aldrin	0.184	0.200	92	0.186	0.200	93	38-121	1	30
Heptachlor Epoxide	0.181	0.200	90	0.185	0.200	93	62-119	2	30
Endosulfan I	0.158	0.200	79	0.159	0.200	80	59-111	1	30
Dieldrin	0.191	0.200	95	0.194	0.200	97	64-126	2	30
4,4'-DDE	0.178	0.200	89	0.184	0.200	92	66-122	3	30
Endrin	0.194	0.200	97	0.197	0.200	99	63-128	2	30
Endosulfan II	0.181	0.200	90	0.185	0.200	93	62-115	2	30
4,4'-DDD	0.202	0.200	101	0.206	0.200	103	47-151	2	30
Endrin Aldehyde	0.161	0.200	81	0.166	0.200	83	52-121	3	30
Endosulfan Sulfate	0.190	0.200	95	0.191	0.200	96	60-125	1	30
4,4'-DDT	0.200	0.200	100	0.201	0.200	101	47-157	0	30
Methoxychlor	0.203	0.200	102	0.191	0.200	96	49-148	6	30
Toxaphene	2.58	2.50	103	2.58	2.50	103	70-130	0	30
Chlordane	2.27	2.00	114	2.46	2.00	123	41-128	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Polychlorinated Biphenyls
PCB's
EPA Method 8082

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409815

Cover Page - Organic Analysis Data Package
Polychlorinated Biphenyls (PCBs)

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-Reference Water	K2409815-001	12/08/2004	12/11/2004

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Signature: _____ Name: _____

Date: 12/27/04 Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: 12/08/2004
Date Received: 12/11/2004

Polychlorinated Biphenyls (PCBs)

Sample Name: E-KB04-Reference Water
Lab Code: K2409815-001

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	0.022	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1221	ND	U	0.40	0.039	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1232	ND	U	0.20	0.055	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1242	ND	U	0.20	0.084	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1248	ND	U	0.20	0.022	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1254	ND	U	0.20	0.034	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1260	ND	U	0.20	0.014	1	12/15/04	12/20/04	KWG0419841	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	10-147	12/20/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0419841-3

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	0.022	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1221	ND	U	0.40	0.039	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1232	ND	U	0.20	0.055	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1242	ND	U	0.20	0.084	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1248	ND	U	0.20	0.022	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1254	ND	U	0.20	0.034	1	12/15/04	12/20/04	KWG0419841	
Aroclor 1260	ND	U	0.20	0.014	1	12/15/04	12/20/04	KWG0419841	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	10-147	12/20/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Extracted: 12/15/2004
Date Analyzed: 12/20/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0419841

	Lab Control Sample KWG0419841-1 Lab Control Spike			Duplicate Lab Control Sample KWG0419841-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	1.71	2.00	85	1.80	2.00	90	46-143	5	30
Aroclor 1260	1.72	2.00	86	1.83	2.00	91	50-139	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Congener Specific PCB's
EPA Method 8082

Organic Analysis:
Congener Specific PCBs

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409815

Cover Page - Organic Analysis Data Package
Congener Specific PCBs

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-Reference Water	K2409815-001	12/08/2004	12/11/2004

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Signature: [signature]

Name: Todd Poyhin

Date: 1/4/05

Title:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: 12/08/2004
Date Received: 12/11/2004

Congener Specific PCBs

Sample Name: E-KB04-Reference Water
Lab Code: K2409815-001
Extraction Method: EPA 3520C
Analysis Method: 8082

Units: ng/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.0	1.4	1	12/15/04	12/21/04	KWG0419850	
PCB 18	ND	U	5.0	2.0	1	12/15/04	12/21/04	KWG0419850	
PCB 28	ND	U	5.0	1.2	1	12/15/04	12/21/04	KWG0419850	*
PCB 44	ND	U	5.0	2.2	1	12/15/04	12/21/04	KWG0419850	
PCB 52	ND	U	5.0	1.5	1	12/15/04	12/21/04	KWG0419850	
PCB 66	ND	U	5.0	1.2	1	12/15/04	12/21/04	KWG0419850	
PCB 101	ND	U	5.0	1.9	1	12/15/04	12/21/04	KWG0419850	
PCB 138	ND	U	5.0	1.3	1	12/15/04	12/21/04	KWG0419850	
PCB 180	ND	U	5.0	1.4	1	12/15/04	12/21/04	KWG0419850	
PCB 187	ND	U	5.0	1.9	1	12/15/04	12/21/04	KWG0419850	
PCB 206	ND	U	5.0	1.5	1	12/15/04	12/21/04	KWG0419850	
PCB 209	ND	U	5.0	2.1	1	12/15/04	12/21/04	KWG0419850	
PCB 77	ND	U	5.0	0.40	1	12/15/04	12/21/04	KWG0419850	
PCB 105	ND	U	5.0	0.26	1	12/15/04	12/21/04	KWG0419850	
PCB 118	ND	U	5.0	1.4	1	12/15/04	12/21/04	KWG0419850	
PCB 126	ND	U	5.0	0.34	1	12/15/04	12/21/04	KWG0419850	
PCB 128	ND	U	5.0	0.39	1	12/15/04	12/21/04	KWG0419850	
PCB 153	ND	U	5.0	0.89	1	12/15/04	12/21/04	KWG0419850	
PCB 169	ND	U	5.0	0.33	1	12/15/04	12/21/04	KWG0419850	
PCB 170	ND	U	5.0	0.40	1	12/15/04	12/21/04	KWG0419850	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	83	10-125	12/21/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: NA
Date Received: NA

Congener Specific PCBs

Sample Name: Method Blank
Lab Code: KWG0419850-3

Units: ng/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
PCB 8	ND	U	5.0	1.4	1	12/15/04	12/21/04	KWG0419850	
PCB 18	ND	U	5.0	2.0	1	12/15/04	12/21/04	KWG0419850	
PCB 28	ND	Ui	5.5	5.5	1	12/15/04	12/21/04	KWG0419850	*
PCB 44	ND	U	5.0	2.2	1	12/15/04	12/21/04	KWG0419850	
PCB 52	ND	U	5.0	1.5	1	12/15/04	12/21/04	KWG0419850	
PCB 66	ND	U	5.0	1.2	1	12/15/04	12/21/04	KWG0419850	
PCB 101	ND	U	5.0	1.9	1	12/15/04	12/21/04	KWG0419850	
PCB 138	ND	U	5.0	1.3	1	12/15/04	12/21/04	KWG0419850	
PCB 180	ND	U	5.0	1.4	1	12/15/04	12/21/04	KWG0419850	
PCB 187	ND	U	5.0	1.9	1	12/15/04	12/21/04	KWG0419850	
PCB 206	ND	U	5.0	1.5	1	12/15/04	12/21/04	KWG0419850	
PCB 209	ND	U	5.0	2.1	1	12/15/04	12/21/04	KWG0419850	
PCB 77	ND	U	5.0	0.40	1	12/15/04	12/21/04	KWG0419850	
PCB 105	ND	U	5.0	0.26	1	12/15/04	12/21/04	KWG0419850	
PCB 118	ND	U	5.0	1.4	1	12/15/04	12/21/04	KWG0419850	
PCB 126	ND	U	5.0	0.34	1	12/15/04	12/21/04	KWG0419850	
PCB 128	ND	U	5.0	0.39	1	12/15/04	12/21/04	KWG0419850	
PCB 153	ND	U	5.0	0.89	1	12/15/04	12/21/04	KWG0419850	
PCB 169	ND	U	5.0	0.33	1	12/15/04	12/21/04	KWG0419850	
PCB 170	ND	U	5.0	0.40	1	12/15/04	12/21/04	KWG0419850	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	87	10-125	12/21/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Extracted: 12/15/2004
Date Analyzed: 12/21/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Congener Specific PCBs

Extraction Method: EPA 3520C
Analysis Method: 8082

Units: ng/L
Basis: NA
Level: Low
Extraction Lot: KWG0419850

	Lab Control Sample KWG0419850-1 Lab Control Spike			Duplicate Lab Control Sample KWG0419850-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
PCB 8	116	100	116	124	100	124	70-130	6	30
PCB 18	99.9	100	100	103	100	103	70-130	3	30
PCB 28	137	100	137 *	144	100	144 *	70-130	5	30
PCB 44	110	100	110	114	100	114	70-130	3	30
PCB 52	96.3	100	96	99.7	100	100	70-130	3	30
PCB 66	99.8	100	100	103	100	103	70-130	4	30
PCB 101	119	100	119	123	100	123	70-130	3	30
PCB 138	97.7	100	98	101	100	101	70-130	4	30
PCB 180	116	100	116	121	100	121	70-130	5	30
PCB 206	114	100	114	119	100	119	70-130	4	30
PCB 209	116	100	116	120	100	120	70-130	3	30
PCB 77	93.3	100	93	97.2	100	97	70-130	4	30
PCB 105	106	100	106	110	100	110	70-130	4	30
PCB 118	120	100	120	127	100	127	70-130	5	30
PCB 126	92.6	100	93	96.4	100	96	70-130	4	30
PCB 153	93.6	100	94	97.5	100	97	70-130	4	30
PCB 169	107	100	107	111	100	111	70-130	4	30
PCB 170	104	100	104	108	100	108	70-130	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Polynuclear Aromatic Hydrocarbons
EPA Method 8270C

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Summary Package

Sample and QC Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004

Service Request: K2409815

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
E-KB04-Reference Water	K2409815-001	12/08/2004	12/11/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Carl Pagner

Name: Carl Pagner

Date: 1/6/05

Title: SVM Supervisor

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: 12/08/2004
Date Received: 12/11/2004

Polynuclear Aromatic Hydrocarbons

Sample Name: E-KB04-Reference Water
Lab Code: K2409815-001

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.0061**	J	0.021	0.0049	1	12/14/04	12/28/04	KWG0419799	
1-Methylnaphthalene	ND	U	0.021	0.0038	1	12/14/04	12/28/04	KWG0419799	
2-Methylnaphthalene	ND	U	0.021	0.0041	1	12/14/04	12/28/04	KWG0419799	
Acenaphthylene	ND	U	0.021	0.0032	1	12/14/04	12/28/04	KWG0419799	
Acenaphthene	ND	U	0.021	0.0043	1	12/14/04	12/28/04	KWG0419799	
Fluorene	ND	U	0.021	0.0053	1	12/14/04	12/28/04	KWG0419799	
Phenanthrene	ND	U	0.021	0.0039	1	12/14/04	12/28/04	KWG0419799	
Anthracene	ND	U	0.021	0.0040	1	12/14/04	12/28/04	KWG0419799	
Fluoranthene	ND	U	0.021	0.0043	1	12/14/04	12/28/04	KWG0419799	
Pyrene	ND	U	0.021	0.0038	1	12/14/04	12/28/04	KWG0419799	
Benz(a)anthracene	ND	U	0.021	0.0041	1	12/14/04	12/28/04	KWG0419799	
Chrysene	ND	U	0.021	0.0037	1	12/14/04	12/28/04	KWG0419799	
Benzo(b)fluoranthene	ND	U	0.021	0.0049	1	12/14/04	12/28/04	KWG0419799	
Benzo(k)fluoranthene	ND	U	0.021	0.0042	1	12/14/04	12/28/04	KWG0419799	
Benzo(a)pyrene	ND	U	0.021	0.0042	1	12/14/04	12/28/04	KWG0419799	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0039	1	12/14/04	12/28/04	KWG0419799	
Dibenz(a,h)anthracene	ND	U	0.021	0.0068	1	12/14/04	12/28/04	KWG0419799	
Benzo(g,h,i)perylene	ND	U	0.021	0.0042	1	12/14/04	12/28/04	KWG0419799	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	71	37-107	12/28/04	Acceptable
Fluoranthene-d10	71	18-137	12/28/04	Acceptable
Terphenyl-d14	89	18-153	12/28/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0419799-6

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0048	1	12/14/04	12/28/04	KWG0419799	
1-Methylnaphthalene	ND	U	0.020	0.0037	1	12/14/04	12/28/04	KWG0419799	
2-Methylnaphthalene	ND	U	0.020	0.0040	1	12/14/04	12/28/04	KWG0419799	
Acenaphthylene	ND	U	0.020	0.0031	1	12/14/04	12/28/04	KWG0419799	
Acenaphthene	ND	U	0.020	0.0042	1	12/14/04	12/28/04	KWG0419799	
Fluorene	ND	U	0.020	0.0051	1	12/14/04	12/28/04	KWG0419799	
Phenanthrene	ND	U	0.020	0.0038	1	12/14/04	12/28/04	KWG0419799	
Anthracene	ND	U	0.020	0.0039	1	12/14/04	12/28/04	KWG0419799	
Fluoranthene	ND	U	0.020	0.0042	1	12/14/04	12/28/04	KWG0419799	
Pyrene	ND	U	0.020	0.0037	1	12/14/04	12/28/04	KWG0419799	
Benz(a)anthracene	ND	U	0.020	0.0040	1	12/14/04	12/28/04	KWG0419799	
Chrysene	ND	U	0.020	0.0036	1	12/14/04	12/28/04	KWG0419799	
Benzo(b)fluoranthene	ND	U	0.020	0.0048	1	12/14/04	12/28/04	KWG0419799	
Benzo(k)fluoranthene	ND	U	0.020	0.0041	1	12/14/04	12/28/04	KWG0419799	
Benzo(a)pyrene	ND	U	0.020	0.0041	1	12/14/04	12/28/04	KWG0419799	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0038	1	12/14/04	12/28/04	KWG0419799	
Dibenz(a,h)anthracene	ND	U	0.020	0.0066	1	12/14/04	12/28/04	KWG0419799	
Benzo(g,h,i)perylene	ND	U	0.020	0.0041	1	12/14/04	12/28/04	KWG0419799	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	61	37-107	12/28/04	Acceptable
Fluoranthene-d10	59	18-137	12/28/04	Acceptable
Terphenyl-d14	75	18-153	12/28/04	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Extracted: 12/14/2004
Date Analyzed: 12/28/2004

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QC
Lab Code: K2409812-006

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0419799

Analyte Name	Sample Result	Batch QCMS KWG0419799-3 Matrix Spike			Batch QCDMS KWG0419799-4 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	0.0074	2.17	2.43	89	2.04	2.43	84	28-110	6	30
1-Methylnaphthalene	ND	2.30	2.43	95	2.15	2.43	89	18-121	7	30
2-Methylnaphthalene	ND	2.38	2.43	98	2.19	2.43	90	29-107	8	30
Acenaphthylene	ND	2.42	2.43	100	2.18	2.43	90	42-112	10	30
Acenaphthene	0.0044	2.35	2.43	97	2.14	2.43	88	41-105	9	30
Fluorene	ND	2.44	2.43	101	2.26	2.43	93	40-115	8	30
Phenanthrene	0.0084	2.33	2.43	96	2.22	2.43	91	40-112	5	30
Anthracene	0.0082	2.44	2.43	100	2.35	2.43	96	25-118	4	30
Fluoranthene	0.013	2.56	2.43	105	2.44	2.43	100	32-131	5	30
Pyrene	0.0095	2.17	2.43	89	2.18	2.43	90	27-131	1	30
Benz(a)anthracene	0.0063	2.28	2.43	94	2.30	2.43	95	21-133	1	30
Chrysene	0.0051	2.30	2.43	94	2.34	2.43	96	24-128	2	30
Benzo(b)fluoranthene	ND	2.29	2.43	94	2.45	2.43	101	17-142	6	30
Benzo(k)fluoranthene	ND	2.39	2.43	98	2.41	2.43	99	19-135	1	30
Benzo(a)pyrene	ND	2.37	2.43	98	2.43	2.43	100	10-146	3	30
Indeno(1,2,3-cd)pyrene	ND	2.45	2.43	101	2.60	2.43	107	16-145	6	30
Dibenz(a,h)anthracene	ND	2.69	2.43	111	2.76	2.43	114	16-142	3	30
Benzo(g,h,i)perylene	ND	2.40	2.43	99	2.52	2.43	104	18-132	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: PPB Environmental
Project: PPB-USACE King's Bay 2004
Sample Matrix: Water

Service Request: K2409815
Date Extracted: 12/14/2004
Date Analyzed: 12/28/2004

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3535
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0419799

	Lab Control Sample KWG0419799-5 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Naphthalene	2.05	2.50	82	44-101
1-Methylnaphthalene	2.09	2.50	83	37-110
2-Methylnaphthalene	2.11	2.50	84	36-106
Acenaphthylene	2.13	2.50	85	49-114
Acenaphthene	2.19	2.50	87	48-107
Fluorene	2.22	2.50	89	55-111
Phenanthrene	2.20	2.50	88	56-108
Anthracene	2.20	2.50	88	42-117
Fluoranthene	2.32	2.50	93	61-123
Pyrene	2.28	2.50	91	53-123
Benz(a)anthracene	2.18	2.50	87	53-123
Chrysene	2.25	2.50	90	57-118
Benzo(b)fluoranthene	2.27	2.50	91	57-132
Benzo(k)fluoranthene	2.35	2.50	94	54-126
Benzo(a)pyrene	2.28	2.50	91	38-142
Indeno(1,2,3-cd)pyrene	2.13	2.50	85	49-139
Dibenz(a,h)anthracene	2.15	2.50	86	47-138
Benzo(g,h,i)perylene	2.26	2.50	91	50-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

APPENDIX G

ADDAMS – STFATE
Modeling Outputs