

SITE ASSESSMENT REPORT

FILE COPY

Puckett Street Properties Crystal Springs, Mississippi

Prepared for

BorgWarner Inc.

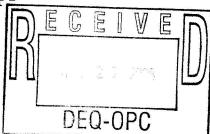
October 2005

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Prepared by

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October 2005

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1.0 EXECUTIVE SUMMARY

The Kuhlman Electric Corporation (KEC) plant in Crystal Springs, Mississippi was constructed and has been owned and operated as a transformer manufacturing plant since the 1950s by KEC or its predecessors (collectively "KEC"). KEC continued to own and operate the plant in March 1999 when BorgWarner Inc. purchased the stock of Kuhlman Corporation, the parent of KEC, and thereafter as well. Seven months later, on October 5, 1999, Kuhlman Corporation sold KEC's stock to KEC Acquisition Corporation. BorgWarner and Kuhlman Corporation indemnified KEC, KEC Acquisition Corporation and their affiliates for historic contamination at the site and have, under the purchase agreement, exercised their right to control any remediation of such contamination.

Previous environmental assessments conducted at the KEC plant site indicated that soil impacted with polychlorinated biphenyl (PCB) Aroclor 1260 was present on-site. PCB impacted soil was reportedly transported and deposited on the properties located at 106 Puckett Street in Crystal Springs, Mississippi.

On August 28, 2001 3TM International, Inc. collected twenty soil samples at 106 Puckett Street. One of the samples had a concentration of PCBs as Aroclor 1260 at 1.83 milligrams per kilogram (mg/Kg), which is above the 1 mg/kg standard established by the Mississippi Department of Environmental Quality (MDEQ). The 3TM International, Inc. (3TM) report was submitted to MDEQ with a cover letter dated October 18, 2004. Upon receipt of the 3TM report MDEQ, on October 25, 2004, requested that BorgWarner investigate the soils at the 106 Puckett Street property. At MDEQ's request, on January 17, 2005 BorgWarner began soil-sampling activities at 106 Puckett Street.

Nine of the 36 soil samples collected from 106 Puckett Street on January 17 and 18, 2005, had PCB concentrations greater than 1 mg/Kg. Based on these results, the assessment was expanded on February 25, and 26 to include properties at 104 and 110

Puckett Street and additional areas at 106 Puckett Street. Nineteen of the 84 samples collected had PCB concentrations greater than 1 mg/Kg.

A site characterization work plan to complete the assessment by delineating the vertical and horizontal extent of contamination at the 104, 106 and 110 Puckett Street and adjacent properties was prepared and submitted to MDEQ for approval in April 2005. The site characterization was conducted from July 14 to 22, 2005 and September 6, 2005 in accordance with the *Data Summary and Site Characterization Work Plan, 104, 106, and 110 Puckett Street,* approved by the MDEQ in May 2005.

Based on the information gathered during previous investigations and this site characterization assessment, it was determined that:

- 1. The property at 104 Puckett Street is impacted by PCB to a maximum depth of 0 to 12" below ground surface (bgs). An area along the northwest property boundary had PCB concentrations greater than 1 mg/Kg.
- 2. The property at 106 Puckett Street is impacted by PCB to a maximum depth of 0 to 12" bgs, with the exception of one location (MWP-027) at the far northwestern corner on the property boundary, which is impacted by PCB to a maximum depth of 12 to 24" bgs. Multiple locations along the eastern and southern property boundaries had PCB concentrations greater than 1 mg/Kg. One sample location in the far northwestern corner of the property boundary had a PCB concentration above 50 mg/Kg at 0 to 12" bgs.
- 3. The property at 110 Puckett Street is impacted by PCB to a maximum depth of 0 to 12" bgs. Multiple samples collected in the roadside ditch along the southern property boundary had PCB concentrations greater than 1 mg/Kg. PCB levels

above 1 mg/Kg were also present in the northeast quadrant of the property near the boundary with 106 Puckett Street.

- 4. The property identified as Parcel 17 is impacted by PCB to a maximum depth of 0 to 12" bgs. This property is located to the north of 106 and 110 Puckett Street. Locations along the southeastern quadrant of this property had PCB concentrations greater than 1 mg/Kg.
- 5. The property identified as Parcel 21 has not been impacted by PCB. This property is located to the west of the 110 Puckett Street site.
- 6. The roadside ditch on the City of Crystal Springs right-of-way property to the south of 106 and 110 Puckett Street sites is impacted by PCB to a maximum depth of 0 to 12" bgs. It appears that this ditch has been impacted from storm water runoff carrying PCB-containing sediments from the 106 and 110 Puckett Street sites into the ditch.
- 7. The vertical and horizontal extent of PCB contamination is fully delineated at the 104, 106 and 110 Puckett Street sites and adjacent properties.

2.0 INTRODUCTION

2.1 Site Description

The subject properties are located along Puckett Street, Crystal Springs, Copiah County, MS 39059, with the center of the project sites being at state plane coordinates N 907265 and longitude E 2289656. The sites are located within the town limits of Crystal Springs. The town center is located approximately 0.5 miles south of the properties (Figure 1).

The sites assessed during this investigation include single family residential properties at 104, 106 and 110 Puckett Street and vacant, wooded properties known as Tax Parcel 21 located on the west side of Puckett Street and Tax Parcel 17 located north of the 104, 106 and 110 Puckett Street.

2.2 Background

The Kuhlman Electric Corporation (KEC) plant in Crystal Springs, Mississippi was constructed and has been owned and operated as a transformer manufacturing plant since the 1950s by KEC or its predecessors (collectively "KEC"). KEC continued to own and operate the plant in March 1999 when BorgWarner Inc. purchased the stock of Kuhlman Corporation, the parent of KEC, and thereafter as well. Seven months later, on October 5, 1999, Kuhlman Corporation sold KEC's stock to KEC Acquisition Corporation. BorgWarner and Kuhlman Corporation indemnified KEC, KEC Acquisition Corporation and their affiliates for historic contamination at the site and have, under the purchase agreement, exercised their right to control any remediation of such contamination.

Previous environmental assessments conducted at the KEC plant site indicated that soil contaminated with polychlorinated biphenyl (PCB) Aroclor 1260 was present on-site. PCB impacted soil was reportedly transported and deposited on the property located at 106 Puckett Street in Crystal Springs, Mississippi.

2.3 Summary of Previous Work Performed at the 106 Puckett Street Property

On August 28, 2001 3TM International, Inc. collected twenty soil samples at 106 Puckett Street (Figure 1). One of the samples had a concentration of PCBs as Aroclor 1260 at 1.83 milligrams per kilogram (mg/Kg), which is the above 1 mg/Kg standard established by the Mississippi Department of Environmental Quality (MDEQ). The 3TM International, Inc. (3TM) report was submitted to MDEQ with a cover letter dated October 18, 2004. Upon receipt of the 3TM report MDEQ, on October 25, 2004, requested that BorgWarner investigate the soils at the 106 Puckett Street property. At MDEQ's request, on January 17, 2005 BorgWarner began soil sampling activities at 106 Puckett Street.

On January 17 and 18, 2005, a total of 36 soil samples were collected and analyzed for PCBs from 106 Puckett Street. Laboratory results indicated that nine samples had PCB concentrations greater than 1 mg/Kg.

On February 25 and 26, 2005 the assessment was expanded to include samples from the side yards of adjacent properties of 104 and 110 Puckett Street, as well as the backyard of the 106 Puckett Street north to the fence line. A total of 84 soil samples were collected during this second sampling event. Soil samples were collected at depths ranging from 0-1 foot below ground surface (bgs) and 1-2 feet bgs. Analytical results from the expanded assessment indicated that of the 84 samples collected, 19 samples had PCB concentrations greater than 1 mg/Kg. One of the 19 samples had a PCB concentration of 51 mg/Kg. All samples with PCB concentrations greater than 1 mg/Kg were collected from 0-1 foot bgs except one sample collected in the northwest corner of the property boundary of 106 Puckett Street. Sample locations and corresponding analytical results are presented on Figure 2. Summaries of the analytical results are presented in Tables 1, 2, and 3. Laboratory reports are included in Appendix 1, and the Data Evaluation Report is included in Appendix 2.

2.4 Site Assessment Objective

Based on the results of the previous site investigations, performed at the Puckett Street properties, characterization activities were expanded to include adjacent properties. A site characterization work plan to complete the assessment by delineating the vertical and horizontal extent of contamination at the 106 and 110 Puckett Street and adjacent properties to the north, west and southwest was prepared and submitted to MDEQ for approval in April 2005. The site characterization was completed in accordance with the *Site Characterization Work Plan* dated April 2005 and approved by the MDEQ in May 2005.

The site characterization objective for the Puckett Street properties was to determine the horizontal and vertical extent of impacted soil. Soil samples were collected along the roadside ditch located on the south side of the 106 and 110 Puckett Street properties. Samples were also collected to the north and northeast, south and southwest of the areas previously sampled and on adjacent properties to a depth until the horizontal and vertical extent of impacted soil was delineated.

3.0 ASSESSMENT ACTIVITIES

3.1 Summary of Work Performed

The assessment activities conducted at the Puckett Street properties were performed from July 14, 2005 to July 22, 2005. The assessment activities included:

- 1. Completion of the delineation of the vertical and horizontal extent of PCB impacted soils on the 106 and 110 Puckett Street properties using direct push and hand auger sampling methods; and,
- 2. Delineation of the extent of PCB impacted soils on adjacent properties located north, west, south and southwest of the 106 and 110 Puckett Street sites using direct push and hand auger sampling methods.

3.2 Direct Push and Hand Auger Soil Sampling

Samples were collected on the 106 and 110 Puckett Street properties with depth at locations previously determined to have PCB concentrations exceeding 1 mg/Kg at the surface using direct-push sampling techniques. Sampling continued vertically until the detectable PCB concentrations were less than 1 mg/Kg. Samples were also collected at 110 Puckett Street at locations not previously sampled. Additionally, samples were collected on the adjacent properties located north, west, south and southwest of 106 and 110 Puckett Street to determine if PCB was present in the soil and to determine the vertical and horizontal extent of contamination, if any.

The samples were collected, by the field geologist, between July 14 and July 22, 2005 with a direct-push sampling rig and hand auger. The direct push rig utilizes GeoProbe® and MacroProbe™ equipment that uses a hydraulically driven hammer to advance a hollow stainless steel sampler to the desired depth. The sample is retained in an acetate

sleeve from which the sample is taken at the desired depth interval. A total of 18 additional samples were collected from nine locations on the 110 Puckett Street property from areas to the north and northeast of those previously sampled. A total of 52 samples were collected from 35 locations along the ditch line to the north of Puckett Street on City of Crystal Springs right-of-way property (the property adjacent to the south and southwest of 106 and 110 Puckett Street. Twenty samples were collected from 10 locations on the property identified in the Copiah County, Mississippi tax records as Parcel 21 (the adjacent property to the west of 110 Puckett Street) and, 30 samples were collected from 15 locations on the property identified by Copiah County, Mississippi tax records as Parcel 17 (the adjacent property to the north of 106 and 110 Puckett Street).

Each sample location was surveyed utilizing a robotic total station to locate each sample point that was then mapped on the state plane coordinate system. A registered land surveyor laid out all of the necessary baselines for control.

Each sample point was assigned a unique location number based on the survey. The vertical extent of PCB-impacted soil was determined by collecting samples vertically through the sub-grade at each location where PCB concentrations were greater than 1 mg/Kg at the surface. Vertical sampling continued at each location until the PCB concentration was less than 1 mg/Kg.

Sample point locations were determined on a 20-foot grid to delineate the lateral extent of contamination to the north, south and southwest of the 106 and 110 Puckett Street properties. Samples collected from 110 Puckett Street and adjacent properties to the north, west, south and southwest were advanced to a maximum depth of 12 to 24 inches below ground surface (bgs). Figure 2 shows locations of all sampling points for all sampling events along with PCB concentrations for each sample collected.

4.0 SITE CHARACTERISTICS

4.1 Source Area

According to one Puckett Street property owner, soil was removed by the owner from the KEC site and used for fill material on the property. Based on information gathered from previous investigations at the KEC plant, it appears that soil located on the Puckett Street properties has been impacted by the same PCB compound previously used at the KEC plant. The roadside ditch line to the south and southwest of the 104, 106 and 110 Puckett Street properties has been impacted by PCB apparently from deposition of sediments from storm water runoff from the Puckett Street properties.

4.2 Regional Geology/Hydrogeology

Sediments consisting of fine-grained sands with local lenses of clay and gravel underlie Crystal Springs and the surrounding area. These red and orange sediments comprise the Citronelle Formation. The Citronelle Formation covers approximately 30 percent of Copiah County and is present at ground surface in the vicinity of Crystal Springs. Gravel, mainly consisting of chert and quartz is present throughout the formation near Crystal Springs and is heavily mined in the surrounding area. The thickness of this formation ranges from a few feet to a maximum of 100 feet with average depths ranging from 20 to 80 feet. Thickness of the unit is controlled by erosion of surface soils. The thinner segments are located in washes and drainage channels, while the thicker portions are located on topographically high areas. The Citronelle formation lies unconformably over the Catahoula Formation in the vicinity of Crystal Springs with the base elevations of the Citronelle ranging from 375 feet mean sea level (msl) to about 430 msl.

According to published literature, the uppermost aquifer in the area of Crystal Springs exists under phreatic conditions (unconfined) and rises into the Citronelle Formation. Groundwater generally exists near the base of the Citronelle. Since the surficial aquifer

is under phreatic conditions, no extensive clay confining units are anticipated above this first aquifer. Depth to groundwater ranges from 20 to greater than 100 feet with more than half of the water levels measured in wells deeper than 50 feet. Average rainfall totals 57.2 inches per year in the Copiah County area, of which approximately 44 inches evaporate. Precipitation that does not evaporate or does not run off into streams and drainages recharges the surficial aquifer.

The region surrounding Crystal Springs is situated in a recharge zone of the Coastal Low Lands Aquifer System. Average recharge into the aquifer system ranges from 0.17 to 0.66 inches per year while discharge rates range from 0 to 0.17 inches per year. The discharge deficit is the result of large water well withdrawals used to meet agricultural demands.

Eight municipal water supply wells are currently in operation within 1.5 miles of the Puckett Street properties. Seven of the municipal wells are used for drinking water and one is used as a water supply for the municipal pool.

4.3 Study Area Geology

The Citronelle Formation covers approximately 30 percent of Copiah County and is present at ground surface in Crystal Springs. The formation is characterized by red and orange sediments. Gravel, mainly consisting of chert and quartz is present throughout the formation near Crystal Springs and is heavily mined in the surrounding area. The thickness of this formation ranges from a few feet to a maximum of 100 feet with average depths ranging from 20 to 80 feet. Thickness of the unit is controlled by erosion of surface soils. The thinner segments are located in washes and drainage ditches/channels, while the thicker portions are located on topographically elevated areas.

4.4 Study Area Hydrogeology

Based on subsurface investigations conducted in Crystal Springs, the depth to the water table beneath upland areas is approximately 60-65 feet bgs. Localized perched groundwater exists at numerous areas above small clay lenses deposited within the Citronelle Formation. The depth to perched groundwater ranges from just beneath ground surface to approximately 20 feet. During site assessment activities, GeoprobeTM direct push soil borings were advanced to a maximum depth of 12 feet bgs, and ground water was not encountered.

5.0 NATURE AND EXTENT OF CONTAMINATION

The constituent of concern in the soil at the Puckett Street and adjacent properties is polychlorinated biphenyl (PCB). PCB is a mixture of many biphenyls with varying degrees of chlorination. The variety used as an insulator fluid by KEC in the transformer manufacturing process was "Aroclor 1260." Aroclor 1260, in its pure form, is a sticky soft resin with a light yellow color and weak odor. It is relatively insoluble in water (0.0020 to 0.080 mg/l) but is soluble in most organic solvents (Montgomery, 1990). PCB is immobile in ground water. It attaches to soil particles; particularly soils with high organic content, and can become mobile in the environment through wind and water erosion of contaminated soil.

5.1 Direct Push and Hand Auger Soil Sampling

During this and previous assessments of Puckett Street properties, a total of 222 direct push or hand auger soil samples were collected from 95 separate locations. Of these, 36 samples were collected from 18 locations on the 106 Puckett Street property on January 17 and 18, 2005 and 84 samples were collected from 42 locations on the 104, 106 and 110 Puckett Street properties on February 25 and 26, 2005. During the latest assessment, on July 14 to July 22, 2005, a total of 99 samples were collected from 69 locations on Puckett Street properties. Of these, 18 samples from nine locations were collected on the 110 Puckett Street property; 30 samples from 15 locations were collected from property known as Parcel 17 adjacent to the north of the 106 and 110 Puckett Street properties; 20 samples from 10 locations were collected from property known as Parcel 21 adjacent to the west of the 110 Puckett Street property; and 31 samples from 35 locations were collected along the roadside ditch line along the north side of Puckett Street and southwest of the106 and 110 Puckett Street properties. On September 6, 2005 three additional samples were collected from one location previously sampled on the 106 Puckett Street property.

Refer to *Data Summary and Site Characterization Workplan*, 104,106, and 110 Puckett Street, April 2005 for data tables and laboratory data sheets pertaining to sampling results obtained prior to July 14, 2005. Figure 2 shows all sample points with PCB concentrations for all sampling conducted in the Puckett Street study area.

5.1.1 104 Puckett Street

Laboratory results from the analysis of soil samples collected on February 25 and 26, 2005 indicate that PCB concentrations exceeded the MDEQ standard of 1 mg/Kg in one of the 20 samples collected on the 104 Puckett Street property. The sample exceeding the 1 mg/Kg PCB concentration was collected in the northwest corner of the site and in close proximity to the property boundary with 106 Puckett Street. During this assessment, soil samples were collected vertically in each location at 0 to 12" and 12 to 24" bgs. Only sample with a PCB concentration greater than 1 mg/Kg was collected at the 0 to 12" depth. No additional samples were collected from this property during this phase of work. Refer to *Data Summary and Site Characterization Workplan, 104,106, and 110 Puckett Street, April 2005* for data tables and laboratory data sheets pertaining to this property.

5.1.2 106 Puckett Street

Laboratory results of samples collected on January 17 and 18, 2005 indicate that PCB concentrations of 1 mg/Kg were exceeded in nine of the 36 samples collected on the 106 Puckett Street property. The samples were collected from 0 to12" bgs. Laboratory results of samples collected on February 25 and 26, 2005 indicate that PCB concentrations of 1 mg/Kg were exceeded in 10 of the twenty samples collected. One of the 10 samples that exceeded 1 mg/Kg PCB collected at the northwest corner of the property boundary (MWP-027) had a PCB concentration greater than 50 mg/Kg. On September 6, 2005 three additional samples were collected at depths of 2 to 3 feet, 3 to 4

feet and 4 to 5 feet bgs to fully determine vertical extent of contamination. Analytical results are summarized in Table 1.

5.1.3 110 Puckett Street

Laboratory results of samples collected on February 25 and 26, 2005 indicate that PCB concentrations of 1 mg/Kg were exceeded in 10 of the 44 samples collected on the 110 Puckett Street property. The samples were collected from 0 to 12" bgs. Analytical results of samples collected on July 14 and 22, 2005 indicated that PCB concentrations of 1 mg/Kg were exceeded in three of the 18 samples collected during this sampling event. The samples were collected from 0 to 12" bgs. Analytical results are summarized in Table 2.

5.1.4 Parcel 17

Laboratory results of samples collected on July 20 and 22, 2005 indicate that PCB concentrations of 1 mg/Kg were exceeded in three of the 30 samples collected on property. The samples were collected from 0 to12" bgs. Analytical results are summarized in Table 3.

5.1.5 Parcel 21

No PCB concentrations greater than 1 mg/Kg were detected in any of the 20 samples collected on the property on July 14, 2005. Analytical results are summarized in Table 4.

5.1.6 City of Crystal Springs

Laboratory results of samples collected on July 15, 18 and 19, 2005 indicate that PCB concentrations of 1 mg/Kg were exceeded in four of the 31 samples collected on the City

of Crystal right-of-way property along the north side of Puckett Street. Analytical results are summarized in Table 5.

5.2 Summary of Delineation

The initial investigations and subsequent site characterization assessment utilizing hand auger and direct push sampling methods confirm that the soil that was placed on the 106 and 110 Puckett Street properties contains PCB concentrations greater than 1 mg/Kg. One location on the 106 Puckett Street property had PCB concentrations greater than 50 mg/Kg at 0 to 12" bgs.

PCB concentrations greater than 1 mg/Kg were also detected at 104 Puckett Street, 110 Puckett Street property north of 106 and 110 Puckett Street known as Parcel 17 and property along the roadside ditch line on City of Crystal Springs right-of-way to the south and southwest of the 106 and 110 Puckett Street properties.

6.0 CONTAMINANT FATE AND TRANSPORT

6.1 Migration Routes

Migration routes, for the PCB impacted soil deposited as fill on the 106 and 110 Puckett Street properties included:

- Airborne dust with adsorbed PCB;
- Surface and stormwater runoff and soil erosion into drainage ditches and streams; and
- Deposition by mechanical means.

Airborne dust is not considered a significant concern under the current conditions. The 106 and 110 Puckett Street properties are grassed and unless the soils are mechanically disturbed the potential for significant quantities of airborne dust to be generated is low.

Surface water runoff and resultant soil erosion were the primary transport mechanisms for PCB from the 106 and 110 Puckett Street properties to the roadside ditch that travels along the north side of Puckett Street and down gradient from the subject properties. PCB was detected in soil samples along this ditch line to the south and southwest from 106 and 110 Puckett Street.

6.2 Contaminant Concentrations

PCB concentrations in the soil on the Puckett Street properties range from a low of non-detect (<0.1 mg/kg) to a high of 51 mg/Kg. PCB concentrations above the MDEQ maximum allowable limit of 1 mg/Kg are limited to the area delineated on Figure 2. The depth of impacted soil ranges from less than 1 foot to a maximum of 3 feet bgs.

6.3 Contaminant Migration

PCB impacted soil was originally brought to 106 Puckett Street by the landowner. The 106 and 110 Puckett Street properties slope gently from the northeast to the south and southwest. The site relief is approximately five feet. Storm water runoff flows generally toward the south and southwest and enters a roadside drainage ditch on the north side of Puckett Street. Soils in the ditch have PCB concentrations greater than 1 mg/Kg as a result of storm water runoff from the 106 and 110 Puckett Street properties. The topography also slopes gently toward the north of 106 Puckett Street. Stormwater runoff has transported PCB across the property line of 106 Puckett Street onto Parcel 17 to the north.

7.0 QUALITY ASSURANCE/QUALITY CONTROL RESULTS

As established by the MDEQ guidelines, all work related to the characterization of the Puckett Street and adjacent properties assessed during this investigation was performed in accordance with the *Environmental Protection Agency (EPA)*, Region IV "Environmental Investigations, Standard Operating Procedures and Quality Assurance Manual", May 1996 (EISOPQAM). Copies of relevant and applicable portions of the EISOPQAM were maintained on site during all field activities. All field personnel were trained in EISOPQAM implementation.

7.1 Site Characterization Assessment Objectives

The site characterization objective for the Puckett Street properties was to determine the horizontal and vertical extent of impacted soil. Soil samples were collected along the roadside ditch located on the south side of the 106 and 110 Puckett Street properties. Samples were also collected to the north and northeast, south and southwest of the areas previously sampled, and on adjacent properties to a depth until the horizontal and vertical extent of impacted soil was delineated.

Soil samples were collected by the field geologist at the locations and frequency described in Section 2.2 of the *Site Characterization Workplan*, dated April 2005, approved by MDEQ in May 2005.

7.2 Analytical Methods

Samples were analyzed for PCB by the on-site laboratory, Environmental Chemistry Consulting Services (ECCS) of Madison, Wisconsin. At least 10% of all samples were split and sent to the off-site laboratory, Paradigm Analytical Laboratories, Inc. (PAL) in Wilmington, North Carolina for PCB analysis. This measure was taken to corroborate the results of the on-site laboratory analyses.

The on-site laboratory analyzed the soil samples using a mini-extraction procedure followed by gas chromatography based on EPA Method 8082 for PCB. The procedure incorporates all the quality control rigors of the full 8082 method including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike (MS)/matrix spike duplicate (MSD) samples.

The off-site laboratory analyzed all soil samples for PCB using EPA Method 8082.

7.3 Key Personnel

The following is the list of key personnel dedicated to this project:

Project Manager: Robert Martin, L.G. Martin & Slagle GeoEnvironmental

Associates, L.L.C.

Duties: Responsible for project management.

<u>Field Manager</u>: Charles Peel, P.G. Peel Consulting, P.L.L.C.

Duties: Overall management of field investigation and remedial activities.

Collection of samples. Maintenance of all field logs and records.

On-site laboratory

Manager: Richard Johnson, Environmental Chemistry Consulting Services,

Inc.

Duties:

Responsible for accepting custody of samples from the field

personnel. Maintenance of laboratory records. Sample analysis.

QA/QC

Coordinator:

Christine Slagle, Martin & Slagle GeoEnvironmental Associates,

L.L.C.

Duties:

Review daily sample logs. Confirm that QC samples are collected

and sampling protocols are met. Assure that data quality

objectives are met.

7.4 Quality Assurance Objectives for Data

The data quality objectives were pre-defined for the ECCS data in that MDEQ considers all on-site laboratory data as screening level data. ECCS uses the same equipment and methodology as the off-site laboratory with the exception of the mini-extraction modification. Ten percent of the samples collected were split and submitted to Paradigm Analytical for confirmation analysis. Following this procedure, the data were qualified as screening data with definitive confirmation under EPA Region IV EISOPQAM guidelines.

Samples designated for further analysis by Paradigm were mixed thoroughly by the sample collectors (in a zip lock bag and/or stainless steel bowl) and delivered to the onsite laboratory where ECCS took its aliquot for analysis. After the analysis, ECCS reserved some sample for contingency purposes and sent the remainder to Paradigm for analysis. Paradigm therefore, analyzed the exact same sample as ECCS.

Equipment rinsates were collected for evaluation of cross-contamination potential. These were prepared by pouring distilled water over the sampling equipment after decontamination of equipment, and collecting, preserving, and analyzing the rinsates generated.

Field blanks were collected. These were prepared by filling sample containers, kept in the transition zone, with distilled water.

Blind duplicate soil samples were collected for analysis and sent to both laboratories. Blind duplicates were collected by homogenizing an aliquot of sample and splitting the homogenized sample into 2 separate containers. After ECCS retained its aliquot of the sample, the remainder of the sample was sent to Paradigm for analysis.

7.5 Sample Control and Field Records

7.5.1 Sample Identification

Each sample was assigned a unique alpha-numeric identifier, based on location and depth of collection point that was clearly recognizable by both laboratories. Sample labels conformed to the labeling requirements under Section 3.2.1 of the EISOPQAM.

7.5.2 Chain of Custody Procedures

The field geologist recorded the sample ID, date, and time sampled in the field logbook at the time of collection. Samples were placed on ice in a cooler and transferred, under proper chain of custody, to the on-site laboratory. Upon arrival at the laboratory, the samples were transferred to the ECCS laboratory manager who logged each sample on ECCS chain of custody forms. Each sample was assigned a unique ECCS internal ID number for tracking purposes. After analysis, the samples were transferred to a sample refrigerator in the on-site laboratory until they were either sent to Paradigm for confirmation analysis or disposed of. For samples sent to Paradigm, a new chain of custody was filled out prior to the sample transfer.

7.5.3 Field Records

Field records were kept in accordance with procedures specified in Section 3.5 of EISOPQAM.

7.6 Laboratory Quality Assurance/ Quality Control

QA/QC for both laboratories was identical. Summaries of each laboratory's procedures follow:

ECCS (On-site Laboratory):

- Continuing calibration standards analyzed every ten samples or less and at the end of a run.
- Blank and LCS samples analyzed every twenty samples or less with a minimum of one per day.
- MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.

Paradigm (Off-site Laboratory):

- Continuing calibration standards analyzed at least once every 12-hour shift plus a minimum of every 20 samples.
- Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
- MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.

7.7 Data Review and Validation

All laboratory reports were reviewed for reporting accuracy and consistency with laboratory QA/QC protocols. The primary validation of data was accomplished through comparison of the data from the on-site laboratory versus the off-site laboratory. The relative percent differences (RPDs) between the on-site and the off-site laboratory results for split samples were calculated for each pair of split samples and compared to a 100 % RPD acceptability threshold. The RPDs for duplicate samples analyzed by the on-site and off-site laboratories were calculated and compared to a 50% acceptability threshold. A detailed discussion of the comparability of the on-site and off-site laboratory results and data validation calculations is included in Appendix 2.

8.0 SUMMARY AND CONCLUSIONS

An assessment was conducted to delineate PCB impacted soils at several properties on Puckett Street in Crystal Springs, MS. Field sampling was conducted during four events in January 2005, February 2005, July 2005 and September 2005. During this and previous assessments of Puckett Street properties, a total of 222 direct push or hand auger soil samples were collected from 95 separate locations. As the result of this assessment, the vertical and horizontal extent of PCB concentrations in soils has been delineated at 104, 106 and 110 Puckett Street and adjacent properties to the, north, west, south and southwest. The site characterization activities confirmed that there has been impact to the adjacent property identified as Parcel 17 located north of the 106 and 110 Puckett Street properties. The roadside drainage ditch to the south and southwest of the 106 and 110 Puckett Street properties on the City of Crystal Springs right-of-way has been impacted by deposition of PCB-containing sediments from storm water runoff from the 106 and 110 Puckett Street properties.

The areas assessed during the additional site characterization activities conducted in July 2005 and September 2005 described in this report include the following:

- Property at 106 and 110 Puckett Street.
- Property identified as Parcel 17. This property is adjacent to the 106 and 110
 Puckett Street sites to the north.
- Property identified as Parcel 21. This property is adjacent to the 110 Puckett Street site to the west.

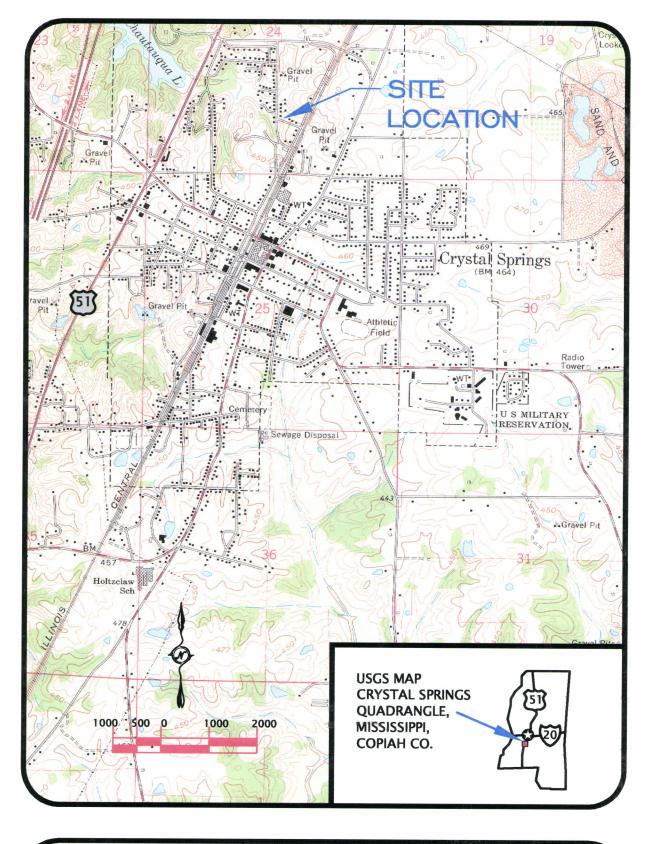
The roadside drainage ditch along the north side of Puckett Street in the City
of Crystal Springs right-of-way. This property is adjacent to the 106 and 110
Puckett Street properties to the south and southwest.

The following conclusions are based on the information gathered during the investigations at the Puckett Street properties:

- 1. Multiple locations on the 106 and 110 Puckett Street properties have soils that contain PCB concentrations greater than 1 mg/Kg. Of the samples collected on the 106 Puckett Street one sample had PCB concentrations greater than 50 mg/Kg. With the exception of this one area on the 106 Puckett Street property (sample location MWP-027), it appears that PCBs are present in the shallow surface soils to a maximum depth of 0 to 12" bgs. At sample location MWP-027, the soil is impacted by PCB to a maximum depth of 24 to 36" bgs.
- 2. PCB concentrations greater than 1 mg/Kg were detected in the adjacent property to the north of the 106 and 110 Puckett Street sites. Three locations in the southeastern section of the site had PCB concentrations greater than 1 mg/Kg to a maximum observed depth of 0 to 12" bgs.
- 3. No PCB concentrations greater than 1 mg/Kg were detected in any of the samples collected in the adjacent property to the west of the 110 Puckett Street sites.
- 4. PCB concentrations greater than 1 mg/Kg were detected in the Crystal Springs right-of-way roadside ditch adjacent to the south and southwest north of the 106

and 110 Puckett Street sites. Four locations in the drainage ditch had PCB concentrations greater than 1 mg/Kg to a maximum observed depth of 0 to 12" bgs.

5. The vertical and horizontal extent of PCB impacted soil has been delineated on the properties described in this report.



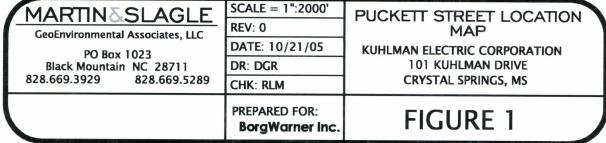


Table 1
Summary of Analytical Results
106 Puckett Street
Crystal Springs, Mississippi

								On-si	On-site Laboratory		Off-site Laboratory	oratory
	Sample ID	le D		Depth	Split	Date Collected	Time Collected	Date Analyzed	Concentration PCB mg/Kg	Date Extracted	Date Date Extracted Analyzed	Concentration PCB mg/Kg
	Η	027	003	24-36	Yes	9/6/2005	14:22	09/07/2005	0.50	09/12/2005	09/12/2005 09/15/2005	09:0
MWP	¥	027	8	36-48		9/6/2005	14:30	09/07/2005	0.30			
MWP	Α	027	900	48-60		9/6/2005	14:38	09/07/2005	0.62			



Table 2
Summary of Analytical Results
110 Puckett Street
Crystal Springs, Mississippi

							On-Sife	On-site Laboratory		Off-site Laboratory	oratory
Sal	Sample ID		Depth	Split	Date Collected	Time Collected	Date Analyzed	Concentration PCB mg/Kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
70.											
GTP DP	023	001	0-12"	Yes	7/14/2005	10:38	07/14/2005	1.0	7/25/2005	7/26/2005	1.1
GTP DP	023	005	12-24"		7/14/2005	10:41	07/14/2005	<0.1			
GTP DP	024	001	0-12"		7/14/2005	10:35	07/14/2005	8.0			The state of the s
стР DР	024	005	12-24"		7/14/2005	10:38	07/14/2005	0.33			
GTP DP	025	001	0-12"		7/14/2005	10:43	07/14/2005	0.51			
GTP DP	025	005	12-24"		7/14/2005	10:46	07/14/2005	0.13		0.00	
GTP DP	026	9	0-12"		7/14/2005	10:51	07/14/2005	9.6		200 4	
GTP DP	020	005	12-24"		7/14/2005	10:53	07/14/2005	0.23			
GTP DP	027	9	0-12"	Yes	7/22/2005	11:14	07/22/2005	0.43	8/2/2005	8/9/2005	0.30
GTP DP	027	005	12-24"		7/22/2005	11:16	07/22/2005	<0.1			
GTP DP	028	9	0-12"		7/22/2005	11:19	07/22/2005	<0.1	7000		
GTP DP	028	005	12-24"		7/22/2005	11:21	07/22/2005	<0.1			
GTP DP	029	001	0-12"		7/22/2005	11:23	07/22/2005	0.25			
GTP DP	029	005	12-24"		7/22/2005	11:26	07/22/2005	<0.1			
GTP DP	030	001	0-12"		7/22/2005	11:30	07/22/2005	0.26			Av. pa
GTP DP	030	005	12-24"		7/22/2005	11:32	07/22/2005	<0.1			
GTP DP	031	001	0-12"		7/22/2005	11:36	07/22/2005	0.22			
GTP DP	031	005	12-24"		7/22/2005	11:39	07/22/2005	<0.1			

Table 3
Summary of Analytical Results
Parcel #17
Crystal Springs, Mississippi

								JIS-UD	On-site Laboratory		OII-SILE LADOI ALUI Y	oratory
						Date	Time	Date	Concentration	Date	Date	Concentration
	Sar	Sample ID		Depth	Split	Collected	Collected	Analyzed	PCB mg/Kg	Extracted	Analyzed	PCB mg/Kg
ESP	ይ	90	100	0-12"	Yes	7/20/2005	12:32	07/20/2005	0.53	7/25/2006	7/26/2005	0.57
ESP	ద	H	002	12-24"		7/20/2005	12:37	07/20/2005	\$0.0	0002/02/1	0007070	0.0
ESP	В	005	901	0-12"		7/20/2005	12:45	07/20/2005	91			
ESP	P.	002	2 002	12-24"		7/20/2005	12:47	07/20/2005	<0.1			
ESP	Ы	003	3 001	0-12"		7/20/2005	12:50	07/20/2005	3.6			
ESP	ద	003	3 002	12-24"		7/20/2005	12:52	07/20/2005	0.15			
ESP	占		1 001	0-12"		7/20/2005	13:00	07/20/2005	1.7			
ESP	ద		005	12-24"		7/20/2005	13:03	07/20/2005	0.36			
ESP	Ы	002	001	0-12"		7/20/2005	13:10	07/20/2005	0.95			
ESP	占	902	005	12-24"		7/20/2005	13:13	07/20/2005	<0.1			
ESP	占		00	0-12"	Yes	7/20/2005	13:19	07/20/2005	0.33	7/25/2005	7/26/2005	72.0
ESP	占		005	12-24"		7/20/2005	13:22	07/20/2005	0.39			
ESP	ద			0-12"		7/20/2005	13:29	07/20/2005	0.28			
ESP	占	-	-	12-24"		7/20/2005	13:31	07/20/2005	<0.1			
ESP	ద	-		0-12"		7/20/2005	15:00	07/20/2005	20.1			
ESP	占	-	-	12-24"		7/20/2005	15:03	07/20/2005	<0.1			
ESP	ద	600	001	0-12"		7/20/2005	15:10	07/20/2005	<0.1			
ESP	머	600	005	12-24"		7/20/2005	15:14	07/20/2005	<0.1			Carlo
ESP	ద			0-12"	Yes	7/21/2005	15:00	07/21/2005	40.1	8/2/2005	8/9/2005	\$0.5 100
ESP	凸		-	12-24"		7/21/2005	15:03	07/21/2005	<0.1			5
ESP	占	9	90	0-12"		7/21/2005	15:09	07/21/2005	<0.1		,	
ESP	ద	5		12-24"		7/21/2005	15:13	07/21/2005	<0.1			
ESP	ద	012		0-12"		7/21/2005	15:18	07/21/2005	<0.1			
ESP	ይ	012	\dashv	12-24"		7/21/2005	15:20	07/21/2005	<0.1			
ESP	ద	013	- !	0-12"		7/21/2005	15:25	07/21/2005	0.31			100
ESP	ద	013	-	12-24"		7/21/2005	15:28	07/21/2005	<0.1			
ESP	<u></u>	94	8	0-12"	Yes	7/21/2005	15:34	07/21/2005	0.50	8/2/2005	8/9/2005	0.59
ESP	ይ	014		12-24"		7/21/2005	15:37	07/21/2005	<0.1			
ESP	ద	915	-	0-12"		7/21/2005	15:40	07/21/2005	0.12			
ESP	음	015	005	12-24"		7/21/2005	15:43	07/21/2005	6 0.1			

Table 4
Summary of Analytical Results
Parcel #21
Crystal Springs, Mississippi

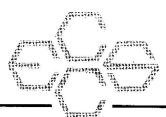
						IIS-IIO	On-site Laboratory		OIT-SILE LABORATORY	oratory
Sam	Sample ID	Depth	Split	Date Collected	Time Collected	Date Analyzed	Concentration PCB mg/Kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
QC ON			27	100011	100	2000,77,20				
	20 20		£	7/14/2005	12:35	07/14/2005	<0.1	7/25/2005	7/26/2005	<0.1
		0-12"		7/14/2005	12:38	07/14/2005	20.1			
-				7/14/2005	12:54	07/14/2005	\$ 0°.1			
JMP DP	003 001	0-12"		7/14/2005	13:02	07/14/2005	<0.1			
JMP DP	003 002			7/14/2005	13:06	07/14/2005	<0.1			
JMP DP	004 001			7/14/2005	13:10	07/14/2005	<0.1			
JMP DP	004 002	12-24"		7/14/2005	13:13	07/14/2005	<0.1			
JMP DP	005 001			7/14/2005	13:20	07/14/2005	<0.1	E		
	005 002	12-24"		7/14/2005	13:24	07/14/2005	<0.1			
JMP DP	000 001		Yes	7/14/2005	14:50	07/14/2005	0.10	7/25/2005	7/26/2005	<0.1
JMP DP	000 005	12-24"		7/14/2005	14:54	07/14/2005	<0.1			
	007 001			7/14/2005	15:09	07/14/2005	0.14			
JMP DP	007 002	12-24"	• • • • • • • • • • • • • • • • • • • •	7/14/2005	15:12	07/14/2005	<0.1			
JMP DP	008 001	0-12"		7/14/2005	15:18	07/14/2005	<0.1			
JMP DP	008 002	12-24"		7/14/2005	15:23	07/14/2005	<0.1			
JMP DP	000 001	11 0-12"		7/14/2005	15:30	07/14/2005	\$0.1			
JMP DP	000 005	12-24"		7/14/2005	15:34	07/14/2005	<0.1			
	010 001	11 0-12"		7/14/2005	15:46	07/14/2005	0.1			
JMP DP	010 002	12-24"	Yes	7/14/2005	15:49	07/14/2005	<0.1	7/25/2005	7/26/2005	<0.1

Summary of Arrafytical Results Crystal Springs Property Puckett Street Crystal Springs, Mississippi

							On-sift	On-site Laboratory		Off-site Laboratory	vratory
	Sam	Sample ID	Depth	Solit	Date Collected	Time	Date	Concentration	Date	Date	Concentration
							nazámi.	Subjuica -	LAllacieu	Allalyzeu	SV/BIII ann
CSP	머	171 00	001 0-12"	Yes	7/15/2005	10:08	7/15/2005	1.2	7/25/2005	7/26/2005	66.0
CSP	Ы	171 00	002 12-24"		7/15/2005	10:10	7/15/2005	<0.1			
SP	占	172 0(001 0-12"		7/15/2005	12:40	7/15/2005	1.0			
CSP	DP	172 0(002 12-24"		7/15/2005	12:43	7/15/2005	<0.1			
SP	PP	173 0(001 0-12"		7/15/2005	12:51	7/15/2005	1.5	7000.000		
CSP	ద	173 00	002 12-24"		7/15/2005	12:54	7/15/2005	<0.1			
CSP	do	174 00	001 0-12"		7/15/2005	12:59	7/15/2005	<0.1			
SSP	占	174 0(002 12-24"		7/15/2005	13:02	7/15/2005	<0.1			
CSP	DP	175 00	001 0-12"		7/15/2005	13:05	7/15/2005	0.49		. Name	
CSP	Б		002 12-24"		7/15/2005	13:08	7/15/2005	<0.1			
CSP	Ы	176 00	001 0-12"		7/15/2005	13:11	7/15/2005	0.15			
CSP	М	176 00	002 12-24"		7/15/2005	13:13	7/15/2005	<0.1			
CSP	ద	177 00	001 0-12"		7/15/2005	13:20	7/15/2005	0.87			10 CC
CSP	占	177 00	002 12-24"		7/15/2005	13:24	7/15/2005	0.45			
CSP	占	178 00	001 0-12"	Yes	7/15/2005	13:28	7/15/2005	1.8	7/25/2005	7/26/2005	1.3
CSP	О	178 00	002 12-24"		7/15/2005	13:32	7/15/2005	<0.1			
SS	Р	179 00	001 0-12"		7/15/2005	14:30	7/15/2005	0.23			
CSP	DP	179 00	002 12-24"		7/15/2005	14:33	7/15/2005	<0.1			
CSP	凸	180 00	001 0-12"		7/15/2005	14:40	7/15/2005	6 .1			
SP	ద		002 12-24"		7/15/2005	14:43	7/15/2005	<0.1			
CSP	Ы	181 001	0-12"		7/15/2005	14:50	7/15/2005	<0.1			
CSP	PP		002 12-24"		7/15/2005	14:53	7/15/2005	<0.1			745
CSP	움	182 001	0-12"	Yes	7/15/2005	14:58	7/15/2005	0.67	7/25/2005	7/26/2005	0.79
CSP	<u>B</u>	182 00	002 12-24"		7/15/2005	15:02	7/15/2005	<0.1			
SP	В				7/15/2005	15:08	7/15/2005	0.21			
CSP	ద		002 12-24"		7/15/2005	15:11	7/16/2005	<0.1			
SP	Ы		0-12"		7/15/2005	15:20	7/16/2005	0.14			
CSP	占				7/15/2005	15:23	7/16/2005	<0.1			
CSP	占			İ	7/15/2005	15:28	7/16/2005	0.12			
CSP	ద				7/15/2005	15:30	7/16/2005	<0.1			
CSP	ద	186 001	0-12"	Yes	7/15/2005	15:38	7/16/2005	0.14	7/25/2005	7/26/2005	<0.1

Summary of Analytical Results Crystal Springs Property Puckett Street Crystal Springs, Mississippi

									כון פונס בתבסומנטו			, S
						Date	Time	Date	Concentration	Date	Date	Concentration
	Sample ID	Ole ID		Depth	Split	Collected	Collected	Analyzed	PCB mg/Kg	Extracted	Analyzed	PCB mg/Kg
						۵						
CSP	占	186	005	12-24"		7/15/2005	15:41	7/16/2005	<0.1			
CSP	ద	187	001	0-12"		7/15/2005	15:50	7/16/2005	60.1			1000
CSP	ద	187	005	12-24"		7/15/2005	15:53	7/16/2005	<0.1			
CSP	ద	188	00	0-12"	Yes	7/18/2005	16:05	7/19/2005	\$0.1	7/25/2005	7/26/2005	<0.1
CSP	占	189	8	0-12"		7/18/2005	16:15	7/19/2005	<0.1			
CSP	Ы	190	8	0-12"		7/18/2005	16:21	7/19/2005	<0.1	100		
CSP	Ы	191	9	0-12"		7/18/2005	16:28	7/19/2005	0.38			
CSP	음	192	9	0-12"		7/18/2005	16:36	7/19/2005	<0.1			
CSP	占	193	9	0-12"		7/18/2005	16:44	7/19/2005	<0.1			
CSP	占	194	9	0-12"		7/18/2005	16:50	7/19/2005	<0.1			
CSP	d d	195	9	0-12"		7/18/2005	16:59	7/19/2005	<0.1			
CSP	占	196	001	0-12"	Yes	7/19/2005	10:10	7/20/2005	<0.1	7/25/2005	7/26/2005	\$0.1
CSP	ద	197	9	0-12"		7/19/2005	10:18	7/20/2005	<0.1			
CSP	吕	198	9	0-12"		7/19/2005	10:22	7/20/2005	<0.1			
CSP	P G	199	90	0-12"		7/19/2005	10:28	7/20/2005	<0.1			
CSP	ద	200	9	0-12"		7/19/2005	10:34	7/20/2005	<0.1		100 000 0000	
CSP	Ы	201	9	0-12"		7/19/2005	10:39	7/20/2005	<0.1			
CSP	ద	202	100	0-12"		7/19/2005	10:44	7/20/2005	<0.1			
CSP	ይ	203	8	0-12"		7/19/2005	10:49	7/20/2005	<0.1			
_	ద	204	001	0-12"		7/19/2005	13:32	7/20/2005	<0.1			
CSP	Ы	205	001	0-12"		7/19/2005	13:42	7/20/2005	<0.1			Ash m



August 8, 2005

Robert Martin Martin & Slagle, LLC P.O. Box 1023 Black Mountain, NC 28711

Ann Killian

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of July. If you have any questions concerning this information, please give me a call.

Sincerely,

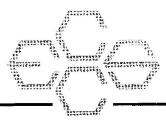
Richard Johnson

Enclosure

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi



TECHNICAL MEMORANDUM

August 8, 2005

To: Robert Martin

Martin Slagle Inc.

From: Richard Johnson

ECCS, Inc.

Re: Field Analytical Methods - QC Summary

Borg Warner - Kuhlman Electric Facility

Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from JMP Property area during July 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

- A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
- B) FEDEX shipping label for Paradigm Labs
- C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

Environmental Chemistry Consulting Services, Inc.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

- 1. All surrogate recoveries were within acceptable ranges.
- 2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.
- 3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.
- 4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

- 1. Standards Preparation Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.
- 2. Sample Preparation SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.
- 3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.
- 4. GC-ECD Analysis A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.
- 5. Quality Control Quality control consisted of the following items:
 - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
 - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
 - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
 - Information is documented in logbook 45 and July run sheets.
- 6. Instrument Conditions Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1
Soil Sample Results – July

Table 1 Kuhlman Electric Crystal Springs, Mississippi PCB Concentrations as Aroclor 1260 Detected

						Field Labo	ratory		
Field Lab. Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	R i s
HH001	JMP-DP-001-001	0-1'	14-Jul-05	12:35	14-Jul-05	< 0.10	00.0	00.0	\Box
HH002	JMP-DP-001-002	1-2'	14-Jul-05	12:38	14-Jul-05	< 0.10	96.3 92.6	96.2	╄
HH003	JMP-DP-002-001	0-1'	14-Jul-05	12:50	14-Jul-05	< 0.10	92.6	83.9 90.5	╀
HH004	JMP-DP-002-002	1-2'	14-Jul-05	12:54	14-Jul-05	< 0.10	92.4	84.2	╀
HH005	JMP-DP-003-001	0-1'	14-Jul-05	13:02	14-Jul-05	< 0.10	95.5	87.8	╀
HH006	JMP-DP-003-002	1-2'	14-Jul-05	13:06	14-Jul-05	< 0.10	94.9	86.6	├-
HH007	JMP-DP-004-001	0-1'	14-Jul-05	13:10	14-Jul-05	< 0.10	97.6	89.4	╁╌
HH008	JMP-DP-004-002	1-2'	14-Jul-05	13:13	14-Jul-05	< 0.10	93.4	96.5	⊢
HH009	JMP-DP-005-001	0-1'	14-Jul-05	13:20	14-Jul-05	< 0.10	92.8	85.3	⊢
HH010	JMP-DP-005-002	1-2'	14-Jul-05	13:24	14-Jul-05	< 0.10	100	105	┝
HH011	JMP-Duplicate	-	14-Jul-05	-	14-Jul-05	< 0.10	92.3	88.4	┢╌
HH012	JMP-DP-006-001	0-1'	14-Jul-05	14:50	14-Jul-05	0.10	91.7	90.9	一
HH013	JMP-DP-006-002	1-2'	14-Jul-05	14:54	14-Jul-05	< 0.10	94.9	90.6	
HH014	JMP-DP-007-001	0-1'	14-Jul-05	15:09	14-Jul-05	0.14	94.4	89.8	
HH015	JMP-DP-007-002	1-2'	14-Jul-05	15:12	14-Jul-05	< 0.10	99.7	90.4	
HH016	JMP-DP-008-001	0-1'	14-Jul-05	15:18	14-Jul-05	< 0.10	90.6	85.4	Г
HH017	JMP-DP-008-002	1-2'	14-Jul-05	15:23	14-Jui-05	< 0.10	91.6	96.4	Г
. HH018	JMP-DP-009-001	0-1'	14-Jul-05	15:30	14-Jul-05	< 0.10	92.4	85.2	
HH019	JMP-DP-009-002	1-2'	14-Jul-05	15:34	14-Jul-05	< 0.10	92.1	92.3	
HH020	JMP-DP-010-001	0-1'	14-Jul-05	15:46	14-Jul-05	< 0.10	88.0	90.7	
HH021	JMP-DP-010-002	1-2'	14-Jul-05	15:49	14-Jul-05	< 0.10	92.7	93.2	

NOTES:

A = Acid Treated.

Surrogate recovery criteria 60-140% unless sample is acid treated.

Surrogate recovery criteria 75-175% if sample is acid treated.

Table 2
Water Sample Results – July

Table 2 Kuhlman Electric Crystal Springs, Mississippi PCB Concentrations as Aroclor 1260 Detected

						Fleig Labo	ratory	
Field Lab Sample ID		Sample	Date Collected	Time Collected	Date Analyzed			
W1304	JMP-FB-001		14_ to LOS	12-24	45 1 1 25			#E-C-E-M(470)
			14-301-05	12:24	15-Jul-05	< 0.25	110	96.6

Table 3
Soil QC Samples - July

Table 3 QC Results

Lab # associated with qc samples:

HH001 through HH020

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

HH009

HH009

834

834

Date Analyzed:

7/14/05

7/14/05

7/14/05

7/14/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	93.1	93.1	00/	10.40	
		33.1	0%	< 0.10	86.4

Table 3 QC Results

Lab # associated with qc samples:

HH021

Matrix

Matrix

Spike

Spike HH020 Duplicate HH020

Blank

LCS

Date Analyzed:

7/14/05

7/14/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	91.2	92.0	-1%	-	

Table 4
Water QC Samples - July

Table 4 QC Results

Lab # associated with qc samples:

W1304

Matrix

Matrix

Spike

Spike W1305 Duplicate W1305

Blank

LCS

Date Analyzed:

7/15/05

7/15/05

7/15/05

7/15/05

Compound	% Rec	% Rec	% RPD	ug/L	% Rec
PCB as 1260	98.6	101	-2%	< 0.25	00.7
	30.0	101	-270	< 0.25	98.7

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

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Environmental Chemistry Consulting Services, Inc.

CHAIN OF CUSTODY

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Page / of 2.
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7003-002	1306			(2-1)	44006
100- 400-	1310			1-0	44004
700-400-	1313			1-2,	HHOOK
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ore F≐Methanol	Relinquished By:				HH/O!
Other(Indicate)					
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Environmental Chemistry Consulting Services, Inc.

Madison, WI 53718

CHAIN OF CUSTODY

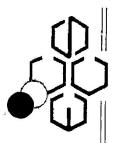
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Page Z of Z—
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Project Number:		Mail Report To:			Invoice To:	
Project Name: KULLINAN GLOCTZI	7	Company:	MRTIN	* 5CAP-LS	Сопряпу	
In: ORYSTAL	4.	Address:			Address:	
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Chill Poss	1		£		P.O. No.: Quote No.:	
Collection		Total		Analysis		Laboratory
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D=HNO3 E=EnCore F=Methanol Relinquished By:	•		Date/Time:	Received By.).vc	Date/Time:
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Environmental Chemistry Consulting Services, Inc.

Madison, WI 53718

Phone 608-221-8700

2525 Advance Road

CHAIN OF CUSTODY

013208 ġ

Turn Around (circle one) Normal Rush ō President F

Laboratory Number W1304 Date/Time: Date/Time: Quote No.: Comments Report Due: Invoice To: Сотрапу: P.O. No.: Address Temp Blank Y N Receipt Temp: Received By: Received By MANTIN 3 XAGIG Requested Analysis 8B Date/Time: Date/Time: 7/14/6 Presery* FAX 608-221-4889 Mail Report To: Сотрапу. Address: Bottles Total Matrix Seal #'s 3 LACUMAN GOLDELL Amfortizey Mystal Sperie Time CHUIC PEDI Collection Relinquished By: Relinquished By Intact/Not Intact Date D=HNO3 E=EnCore F=Methanol Custody Seal: Present/Absent JMP-48-00 C=H2SO4 Sample Description *Preservation Code G=NaOH O=Other(Indicate) Sampled By (Print): A=None B=HCL Project Location: Project Number: Project Name: Shipped Via:

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Appendix B FEDEX shipping label for Paradigm Labs

Express US Airbill Fadex Tracking Number 4407 3329	is 12-0215/2 2003/2003 Statistic (Agr.)
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Company PEEL CONSULTING	FedEx 20ay Second business day FedEx Express Saver Not business day FedEx Exercise rate not evaluate. Minimum charge: Des-posed rate 4b Express Freight Service Packages over 156 lbs. To most locations
Address 140 CHAPEL LANE DEPLACES BURGEROOM	FedEx 1Day Freight* FedEx 2Day Freight Next business day** Call for Confirmation: FedEx 2Day Freight Second business day**
Vour Internal Billing Reference First Micharacters will appear as finoica. MHRIN + SLACE LETIONAL	5 Packaging FedEx Pak* Includes FedEx Sheet Pak FedEx Sheet P
To Recipient's SAMPLE CUSTODIAN Phone ()	Special Handling Include FedEx orders in Section 3. SATURDAY Delivery Available ONLY for FedEx Dow, FedEx Dow, FedEx Down, FedEx Fex Oversight Front to static 27 codes Described Front Oversight FedEx Down, FedEx Pex Oversight FedEx Pex Oversight FedEx Pex Oversig
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Try online shipping at fedex.com	\$.00 †Our liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Galy Sign to Authorize Delivery Without a Signature
By using this Arbitil you agree to the service conditions on the back of this Arbitil sed in our current Service Guide, including terms that faint our liability. Questions? Visit our Web site at fedex.com or call 1.800.GoFedEx 1.800.483.3339.	8y signing you authorize us to deliver this shipment without obtaining a eignature and egree to indisently and hold us hernaless from any resulting claims. 499 SRF-Rev Data 11/03-Part #198278-401984-2003 Feets-entertri

Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

The later of the state of the s PARADIGM ANALYTICAL LABORATORIES, INC.

Phone: (910)-350-1903 FAX: (910)-350-1557 5500 Business Drive, Wilmington, NC 28405

Chain-of Custody Record & Analytical Request

coc# 46363

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August 8, 2005

Robert Martin Martin & Slagle, LLC P.O. Box 1023 Black Mountain, NC 28711

Dear Mr. Martin,

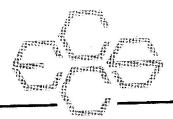
Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of July. If you have any questions concerning this information, please give me a call.

Sincerely,

Richard Johnson

Enclosure

Technical Memorandum Borg Warner / Kuhlman Electric Crystal Springs, Mississippi



TECHNICAL MEMORANDUM

August 8, 2005

To: Robert Martin

Martin Slagle Inc.

From: Richard Johnson

ECCS, Inc.

Re: Field Analytical Methods – QC Summary

Borg Warner - Kuhlman Electric Facility

Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from GTP Property area during July 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

- A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
- B) FEDEX shipping label for Paradigm Labs
- C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

Environmental Chemistry Consulting Services, Inc.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

- 1. All surrogate recoveries were within acceptable ranges.
- 2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.
- 3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.
- 4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

- 1. Standards Preparation Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.
- 2. Sample Preparation SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.
- 3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.
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 - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
 - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
 - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
 - Information is documented in logbook 45 and July run sheets.
- 6. Instrument Conditions Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1
Soil Sample Results – July

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						Tick Lubo			
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	R in s
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GG047	GTP-DP-023-001	0-1'	14-Jul-05	10:38	14-Jul-05	1.0	90.1	96.1	╄
GG048	GTP-DP-023-002	1-2'	14-Jul-05	10:41	14-Jul-05	< 0.10	93.1	89.8	╄
GG049	GTP-DP-024-001	0-1'	14-Jul-05	10:35	14-Jul-05	8.0	89.8	89.9	╀
GG050	GTP-DP-024-002	1-2'	14-Jul-05	10:38	14-Jul-05	0.33	99.9	90.2	+
GG051	GTP-DP-025-001	0-1'	14-Jul-05	10:43	14-Jul-05	0.51	84.1	75.3	Ļ
GG052	GTP-DP-025-002	1-2'	14-Jul-05	10:46	14-Jul-05	0.13	93.6	85.5	1
GG053	GTP-DP-026-001	0-1'	14-Jul-05	10:51	14-Jul-05	9.9	94.4	95.7	┸
GG054	GTP-DP-026-002	1-2'	14-Jul-05	10:53	14-Jul-05	0.23	92.2	89.6	_
GG055	GTP-Duplicate	-	14-Jul-05	_	14-Jul-05	0.91	90.8	90.9	
GG056	GTP-DP-027-001	0-1'	22-Jul-05	11:14	22-Jul-05	0.43	99.6	83.9	\perp
GG057	GTP-DP-027-002	1-2'	22-Jul-05	11:16	22-Jul-05	< 0.10	99.6	96.6	┸
GG058	GTP-DP-028-001	0-1'	22-Jul-05	11:19	22-Jul-05	< 0.10	102	94.7	┸
GG059	GTP-DP-028-002	1-2'	22-Jul-05	11:21	22-Jul-05	< 0.10	102	97.4	
GG060	GTP-Duplicate		22-Jul-05	-	22-Jul-05	0.39	103	87.3	
GG061	GTP-DP-029-001	0-1'	22-Jul-05	11:23	22-Jul-05	0.25	102	95.0	
GG062	GTP-DP-029-002	1-2'	22-Jul-05	11:26	22-Jul-05	< 0.10	101	97.8	\perp
GG062 GG063	GTP-DP-030-001	0-1'	22-Jul-05	11:30	22-Jul-05	0.26	99.7	90.4	
	GTP-DP-030-002	1-2'	22-Jul-05	11:32	22-Jul-05	< 0.10	104	109	\perp
GG064	GTP-DP-031-001	0-1	22-Jul-05	11:36	22-Jul-05	0.22	100	85.0	
GG065	GTP-DP-031-002	1-2'	22-Jul-05	11:39	22-Jul-05	< 0.10	101	96.3	
GG066	GIP-DF-031-002	1-2-				· · · · · · · · · · · · · · · · · · ·			

NOTES:

A = Acid Treated.

Surrogate recovery criteria 60-140% unless sample is acid treated. Surrogate recovery criteria 75-175% if sample is acid treated.

Table 2
Water Sample Results – July

Table 2 Kuhlman Electric Crystal Springs, Mississippi PCB Concentrations as Aroclor 1260 Detected

						Field Labor	atory	
		Sample	Date Collected	Time Collected	Date Analyzed		Surrogate TCMX(%)	Surrogate DCBP(%)
			44 1-1 05	10:23	15-Jul-05	< 0.25	106	93.2
W1303 W1312	GTP-FB-002 GTP-FB-003	-	14-Jul-05 22-Jul-05	11:13	26-Jul-05		113	108

Table 3
Soil QC Samples - July

Table 3 QC Results

Lab # associated with qc samples:

GG047 through GG055

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

HH009

HH009

833

833

Date Analyzed:

7/14/05

7/14/05

7/14/05

7/14/05

% Rec	% Rec	% RPD	mg/kg	% Rec
		0%	< 0.10	90.3
93.1	93.1		40,10	30.15
	% Rec		76 1480	76 Nec 76

Table 3 QC Results

Lab # associated with qc samples:

GG056 through GG066

Matrix

Matrix

Spike

Spike

Duplicate

Biank

LCS

GG059

GG059

841

841

Date Analyzed:

7/22/05

7/22/05

7/22/05

7/22/05

% Rec	% Rec	% RPD	mg/kg	% Rec
98.6	98.1	1%	< 0.10	97.6
			70 100	70100

Table 4 Water QC Samples - July

Lab # associated with qc samples:

W1303

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

W1305

7/15/05

Date Analyzed:

W1305

7/15/05

7/15/05

7/15/05

Compound	% Rec	% Rec	% RPD	ug/L	% Rec
PCB as 1260	98.6	101	-2%	< 0.25	98.7

Lab # associated with qc samples:

W1312

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

W1312

W1312

Date Analyzed:

7/27/05

7/27/05

7/26/05

7/26/05

Compound	% Rec	% Rec	% RPD	ug/L	% Rec
PCB as 1260	92.7	90.9	2%	< 0.25	104

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

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Environmental Chemistry

Consulting Services, Inc.

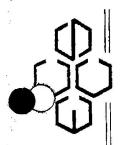
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*Preservation Code	Relinquished By.		Date/Time:	Received By:		Date/Time:
A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol	Relinquished By			Received By:		Date/Time:
G=NaOH O=Other(Indicate) Custody Seal: Present/Absent	Intact/Not Infact Seal #'s			Receipt Temp:	7	
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Environmental Chemistry

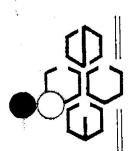
Consulting Services, Inc. 2525 Advance Road

Phone 608-221-8700

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Environmental Chemistry

Madison, WI 53718 Consulting Services, Inc. 2525 Advance Road

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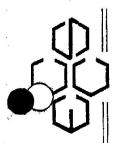
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Appendix B FEDEX shipping label for Paradigm Labs

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Questions? Visit our Web site at fedex.com 0295350	7499
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By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold as harmless from any resulting claims.

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Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

PARADIGM ANALYTICAL LABORATORIES, INC.

Chain-of Custody Record & Analytical Request Paradigm American Laboratorica, Iran

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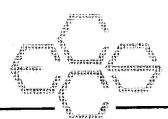
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Please specify any special reporting State Certification Requested *** ** *** requirements TERMS AND CONDITIONS Comments: SEE REVERSE FOR coc# 44656 Other ,1-0 Report To: Page — STATE. SC Invoice To: 66056 09000 Z Date | Time & Temperature Chain-of Custody Record & Analytical Request A 61 . . . 1 A P.O. Number: Analyses Date: Job Number: Turnaround: Project ID: Kuttuntial Elegatic MARTIN per Surger - Robert (prints 1111) · · · Received By Pess X Contact: Lot ERT PARADIGM ANALYTICAL LABORATORIES, INC. Fax: Phone: X X Date | Time 7/18/5/11/20 Phone: (910)-350-1903 FAX: (910)-350-1557 5500 Business Drive, Wilmington, NC 28405 5 7 4/11/ Sofzz/E Client: MARTINA SCACLE Relinquished By Address: BLACK MINUTAIN Sohuft GTP- DF-027-001 GTP-DupulcATZ Quote #: Address:



August 8, 2005

Robert Martin Martin & Slagle, LLC P.O. Box 1023 Black Mountain, NC 28711

Dear Mr. Martin,

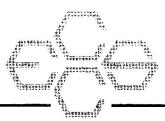
Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of July. If you have any questions concerning this information, please give me a call.

Sincerely,

Richard Johnson

Enclosure

Technical Memorandum Borg Warner / Kuhlman Electric Crystal Springs, Mississippi



TECHNICAL MEMORANDUM

August 8, 2005

To: Robert Martin

Martin Slagle Inc.

From: Richard Johnson

ECCS, Inc.

Re: Field Analytical Methods – QC Summary

Borg Warner - Kuhlman Electric Facility

Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from CSP Property area during July 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

- A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
- B) FEDEX shipping label for Paradigm Labs
- C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

Environmental Chemistry Consulting Services, Inc.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

- 1. All surrogate recoveries were within acceptable ranges with the exception of one sample (C252). Method states that 1 of the 2 required surrogates must be within range.
- 2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.
- 3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.
- 4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

- 1. Standards Preparation Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs -0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes -0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.
- 2. Sample Preparation SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.
- 3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.
- 4. GC-ECD Analysis A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.
- 5. Quality Control Quality control consisted of the following items:
 - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
 - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
 - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
 - Information is documented in logbook 45 and July run sheets.
- 6. Instrument Conditions Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1
Soil Sample Results – July

Table 1 Kuhlman Electric Crystal Springs, Mississippi PCB Concentrations as Aroclor 1260 Detected

C217 CS C218 CS C219 CS C220 CS C221 CS C222 CS C223 CS C224 CS C225 CS C226 CS C227 CS	Sample ID P-DP-171-001 P-DP-171-002 SP- Duplicate P-DP-172-001 P-DP-173-001 P-DP-173-001 P-DP-173-002 P-DP-174-001	Sample Depth 0-1' 1-2' - 0-1' 1-2'	Date Collected 15-Jul-05 15-Jul-05 15-Jul-05	Time Collected 10:08 10:10	Date Analyzed	Concentration (mg/kg) 1.2	Surrogate TCMX(%)	Surrogate DCBP(%)	R i n s
C218 CS C219 CS C220 CS C221 CS C222 CS C223 CS C224 CS C225 CS C226 CS C227 CS	P-DP-171-002 SP- Duplicate P-DP-172-001 P-DP-173-001 P-DP-173-002	1-2' - 0-1' 1-2'	15-Jul-05 15-Jul-05			12		i .	7
C218 CS C219 CS C220 CS C221 CS C222 CS C223 CS C224 CS C225 CS C226 CS C227 CS	P-DP-171-002 SP- Duplicate P-DP-172-001 P-DP-173-001 P-DP-173-002	1-2' - 0-1' 1-2'	15-Jul-05 15-Jul-05			1.4	90.3	86.4	╁
C219 CS C220 CS C221 CS C222 CS C223 CS C224 CS C225 CS C226 CS C227 CS	SP- Duplicate P-DP-172-001 P-DP-172-002 P-DP-173-001 P-DP-173-002	0-1' 1-2'	15-Jul-05	10.10	15-Jul-05	< 0.10	95.1	91.0	T
C220 CS C221 CS C222 CS C223 CS C224 CS C225 CS C226 CS	P-DP-172-001 P-DP-172-002 P-DP-173-001 P-DP-173-002	1-2'		-	15-Jul-05	1.2	90.2	91.7	T
C221 CS C222 CS C223 CS C224 CS C225 CS C226 CS	P-DP-172-002 P-DP-173-001 P-DP-173-002	1-2'	((:)=, (12:40	15-Jul-05	1.0	91.5	88.0	T
C222 CS C223 CS C224 CS C225 CS C226 CS C227 CS	P-DP-173-001 P-DP-173-002		15-Jul-05	12:43	15-Jul-05	< 0.10	93.2	90.4	T
C223 CS C224 CS C225 CS C226 CS C227 CS	P-DP-173-002	0-1'	15-Jul-05	12:51	15-Jul-05	1.5	95.5	80.3	1
C224 CS C225 CS C226 CS C227 CS		1-2'	15-Jul-05	12:54	15-Jul-05	< 0.10	93.4	85.4	1
C225 CS C226 CS C227 CS		0-1'	15-Jul-05	12:59	15-Jul-05	< 0.10	89.7	86.3	1
C226 CS C227 CS	P-DP-174-001	1-2'	15-Jul-05	13:02	15-Jul-05	< 0.10	91.9	89.9	T
C227 CS	P-DP-175-001	0-1'	15-Jul-05	13:05	15-Jul-05	0.49	90.5	87.0	T
	P-DP-175-001	1-2'	15-Jul-05	13:08	15-Jul-05	< 0.10	93.2	89.0	T
	P-DP-176-001	0-1'	15-Jul-05	13:11	15-Jul-05	0.15	91.3	84.9	十
	SP-DP-176-001	1-2'	15-Jul-05	13:13	15-Jul-05	< 0.10	94.3	87.7	T
	SP-DP-177-001	0-1'	15-Jul-05	13:20	15-Jul-05	0.87	89.2	76.8	T
0,400		1-2'	15-Jul-05	13:24	15-Jul-05	0.45	90.0	80.0	1
	SP-DP-177-002	0-1'	15-Jul-05	13:28	15-Jul-05	1.8	90.7	81.6	+
	SP-DP-178-001	1-2'	15-Jul-05	13:32	15-Jul-05	< 0.10	92.8	84.5	十
	SP-DP-178-002	0-1'	15-Jul-05	14:30	15-Jul-05	0.23	89.4	84.1	†
	SP-DP-179-001	1-2'	15-Jul-05	14:33	15-Jul-05	< 0.10	91.1	85.6	十
	SP-DP-179-002	0-1'	15-Jul-05	14:40	15-Jul-05	< 0.10	90.8	84.3	T
	SP-DP-180-001	1-2'	15-Jul-05	14:43	15-Jul-05	< 0.10	87.9	85.6	+
	SP-DP-180-002	0-1'	15-Jul-05	14:50	15-Jul-05	< 0.10	90.1	85.4	1
	SP-DP-181-001	1-2'	15-Jul-05	14:53	15-Jul-05	< 0.10	90.8	85.1	十
	SP-DP-181-002	0-1'	15-Jul-05	14:58	15-Jul-05	0.67	91.8	83.4	十
	SP-DP-182-001	1-2'	15-Jul-05	15:02	15-Jul-05	< 0.10	90.9	82.3	十
	SP-DP-182-002	0-1'	15-Jul-05	15:08	15-Jul-05	0.21	87.8	84.0	†
	SP-DP-183-001	1-2'	15-Jul-05	15:11	16-Jul-05	< 0.10	89.2	82.2	十
<u> </u>	SP-DP-183-002	0-1'	15-Jul-05	15:20	16-Jul-05	0.14	87.3	80.8	1
	SP-DP-184-001	1-2'	15-Jul-05		16-Jul-05		90.1	81.8	T
	SP-DP-184-002		15-Jul-05	15:28	16-Jul-05	0.12	90.0	82.2	T
	SP-DP-185-001	0-1'		15:30	16-Jul-05	< 0.10	91.5	82.9	+
	SP-DP-185-002	1-2'	15-Jul-05 15-Jul-05	15:38	16-Jul-05	0.14	88.2	80.3	T
	SP-DP-186-001	0-1'	15-Jul-05 15-Jul-05	15:41	16-Jul-05	< 0.10	91.5	78.1	+
	SP-DP-186-002	1-2' 0-1'	15-Jul-05	15:50	16-Jul-05	< 0.10	86.2	79.2	T
	SP-DP-187-001		15-Jul-05 15-Jul-05	15:53	16-Jul-05	< 0.10	88.1	77.1	1
	SP-DP-187-002	1-2'	18-Jul-05		19-Jul-05	< 0.10	136	61.8	1
	SP-DP-188-001	0-1'	18-Jul-05		19-Jul-05	< 0.10	138	103	1
	SP-DP-189-001	0-1'	18-Jul-05		19-Jul-05	< 0.10	132	109	7
C254 CS	SP-DP-190-001	0-1' 0-1'	18-Jul-05		10-001-00	0.38	136	102	1

NOTES:

- Acid Treated.

Surrogate recovery criteria 60-140% unless sample is acid treated. Surrogate recovery criteria 75-175% if sample is acid treated.

Table 1 Kuhlman Electric Crystal Springs, Mississippi PCB Concentrations as Aroclor 1260 Detected

						Field Labo	ratory		
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TQMX(%)	Surrogate DCBP(%)	1.8
C256	CSP-DP-192-001	0-1'	18-Jul-05	16:36	19-Jul-05	< 0.10	119	111	A
C257	CSP- Duplicate	-	18-Jul-05	-	19-Jul-05	< 0.10	122	112	Α
C258	CSP-DP-193-001	0-1'	18-Jul-05	16:44	19-Jul-05	< 0.10	120	100	Α
C259	CSP-DP-194-001	0-1'	18-Jul-05	16:50	19-Jul-05	< 0.10	120	107	Α
C260	CSP-DP-195-001	0-1'	18-Jul-05	16:59	19-Jul-05	< 0.10	135	106	Α
C261	CSP-DP-196-001	0-1'	19-Jul-05	10:10	20-Jul-05	< 0.10	112	106	Α
C262	CSP-DP-197-001	0-1'	19-Jul-05	10:18	20-Jul-05	< 0.10	122	96.1	Α
C263	CSP-DP-198-001	0-1'	19-Jul-05	10:22	20-Jul-05	< 0.10	109	93.1	Α
C264	CSP-DP-199-001	0-1'	19-Jul-05	10:28	20-Jul-05	< 0.10	110	101	Α
C265	CSP-DP-200-001	0-1'	19-Jul-05	10:34	20-Jul-05	< 0.10	135	110	Α
C266	CSP-DP-201-001	0-1'	19-Jul-05	10:39	20-Jul-05	< 0.10	120	93.3	A
C267	CSP-DP-202-001	0-11	19-Jul-05	10:44	20-Jul-05	< 0.10	117	96.7	Α
C268	CSP-DP-203-001	0-1'	19-Jul-05	10:49	20-Jul-05	< 0.10	118	94.8	Α
C269	CSP- Duplicate	-	19-Jul-05	-	20-Jul-05	< 0.10	106	100	Α
C270	CSP-DP-204-001	0-1'	19-Jul-05	13:32	20-Jul-05	< 0.10	133	87.8	A
C271	CSP-DP-205-001	0-1'	19-Jul-05	13:42	20-Jul-05	< 0.10	126	92.7	Α

NOTES:

A = Acid Treated.

Surrogate recovery criteria 60-140% unless sample is acid treated. Surrogate recovery criteria 75-175% if sample is acid treated.

Table 2 Water Sample Results – July

Table 2 Kuhlman Electric Crystal Springs, Mississippi

PCB Concentrations as Aroclor 1260 Detected

							ratory	
Field Lab	Sample ID	Sample	Date	Time	Date	Concentration	Surrogate	Surrogate
Sample ID		Depth	Collected	Collected	Analyzed	(ug/L)	TCMX(%)	DCBP(%)
W1305	CSP-FB-008	-	15-Jul-05	10:05	15-Jul-05	< 0.25	109	97.4
W1310	CSP-FB-009		18-Jul-05	16:17	20-Jul-05	< 0.25	110	112

Table 3
Soil QC Samples - July

Lab # associated with qc samples:

C217 through C236

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

C218

C218

835

835

Date Analyzed:

7/15/05

7/15/05

7/15/05

7/15/05

91.5	2%	< 0.10	91.6
	91.5	91.5 2%	91.5 2% < 0.10

Lab # associated with qc samples:

C237 through C251

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

C251

C251

836

836

Date Analyzed:

7/16/05

7/16/05

7/16/05

7/16/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	85.3	86.0	-1%	< 0.10	82.9

Lab # associated with qc samples:

C252 through C260

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

C259

C259

837

837

Date Analyzed:

7/19/05

7/19/05

7/19/05

7/19/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	99.5	94.8	5%	< 0.10	106

Lab # associated with qc samples:

C261 through C271

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

C265

C265

838

838

Date Analyzed:

7/20/05

7/20/05

7/19/05

7/20/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	112	107	5%	< 0.10	99.2

Table 4 Water QC Samples - July

Table 4 QC Results

Lab # associated with qc samples:

Matrix

W1305

Matrix

Spike

Spike

Duplicate

Blank

LCS

W1305

7/15/05

Date Analyzed:

W1305

7/15/05

7/15/05

7/15/05

Compound	% Rec	% Rec	% RPD	ug/L	% Rec
PCB as 1260	98.6	101	-2%	< 0.25	98.7

Table 4 QC Results

Lab # associated with qc samples:

W1310

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

W1309

W1309

Date Analyzed:

7/20/05

7/20/05

7/20/05

7/20/05

111	4%	< 0.25	115
	111	111 4%	111 4% < 0.25

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

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OSD

Madison, WI 53718 FAX 608-221-4889

Phone 608-221-8700

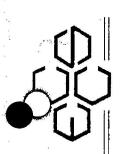
2525 Advance Road

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,	Collection		Total		Analysis			Laboratory
Sample Description	1	Time Matrix	x Bottles	Preserv*	Requested		Comments	Number
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950 - DUP								CAIG
100-175-70-85	040	3	j.				1-0	6220
700-1	7	1243					,2-1	C22.
173-001	7	1221					(2-1)	CAAL
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174.001	454	6.8					,1-0	6224
7.00.	1302	2,					,2-1	CLAST
175.001	7	1305				В	0-1,	6226
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D=HNO3 E=EnCore F=Methanol G=NaOH O=Other(Indicate)	Relinquished By:	-31			Date/Time:	Received By:		Dáte/Time:
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2525 Advance Road . Phone 608-221-8700

Madison, WI 53718 FAX 608-221-4889

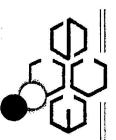
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Madison, WI 53718

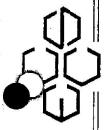
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Phone 608-221-8700	FAX 608-221-4889			Report Due:	
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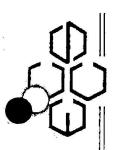
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Madison, WI 53718

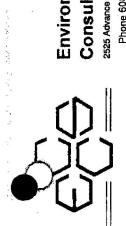
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Environmental Chemistry

Consulting Services, Inc. 2525 Advance Road

Madison, WI 53718 FAX 608-221-4889

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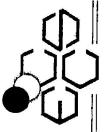
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Environmental Chemistry

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Laboratory W1710 Number Turn Around (circle one) Normal Rush Quote No.: 013215 Comments Report Due: Invoice To: Company: P.O. No.: Address: CHAIN OF CUSTODY Requested Analysis Company MANTIN + SUACIC レジダ 50 27 Madlson, WI 53718 Presery* FAX 608-221-4889 Mail Report To: Consulting Services, Inc. Address: Bottles Total 3 Matrix Phone 608-221-8700 7/18/11/1617 Time 2525 Advance Road ELECTRIC hud Per COMITTE STRIDES Date Kuttutt Sample Description 600-8-J-153 Sampled By (Print):

*Preservation Code	Relinquished By:	Date/Time:	Rebeived By:	Date/Fime:
A=None B=HCL C=H2SO4	Make an Pel	7/18/65 /700	* Les Mutor	7/18/05
D=HNO3 E=EnCore F=Methanol	Relinquished By:	Date/Time:	Received By	Date/Time:
G=NaOH O=Other(Indicate)		7		
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Appendix B FEDEX shipping label for Paradigm Labs

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From Please page and pressport. 7 120 05 Sender's FedEx Account Number	4a Express Package Service Packages up to 150 lbs. FedEx Priority Overnight FedEx Standard Overnight FedEx First Overnight
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Name Chuck Pec Phone (601) 888-2792	FedEx 2Day FedEx Express Sever Third business day* FedEx Express Sever
COMPANY PEEL CONSULTING	4b Express Freight Service Packages over 150 lbs.
Address 140 CHAPEL LANE	FedEx 1Day Freight* FedEx 2Day Freight FedEx 3Day Freight FedEx 3D
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We cannot deliver to P.O. boxes or P.O. ZiP codes. Dept./Poer/Subs/Room Address	Sender X Recipient Third Party Credit Card Cash/Chack
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By using this Airbil you agree to the service conditions on the back of this Airbil and in our current Service Guide, including terms that first our fability.

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By signing you authorize us to deliver this ehipment without obtaining a signature and agree to indemnify and hold us hermiess from any resulting claims.

[†]Our liability is limited to \$100 unless you declare a higher value. See back for details.

466

FedEx Use Only

SRF-Rev. Date 11/03-Part #158279-@1994-2003 FedEx-PRINTED IN U.S.A.

8 Sign to Authorize Delivery Without a Signature

Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

5500 Business Drive, Wilmington, NC 28405 Phone. (910)-350-1903 FAX: (910)-350-1557

Chain of Custody Record & Analytical Request

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coc# 46364

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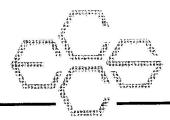
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coc# 46365

Chain-of Custody Record & Analytical Request

PARADIGM ANALYTICAL LABORATORIES, INC.

5500 Business Drive, Wilmington, NC 28405



August 8, 2005

Robert Martin Martin & Slagle, LLC P.O. Box 1023 Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of July. If you have any questions concerning this information, please give me a call.

Sincerely,

Richard Johnson

Enclosure

Technical Memorandum Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

Table 1 Kuhlman Electric Crystal Springs, Mississippi

PCB Concentrations as Aroclor 1260 Detected

						Field Labo	ratory		
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	R i n s
11001	ESP-DP-001-001	0-1'	20-Jul-05	12:32	20-Jul-05	0.53	99.2	97.7	_
11001 11002	ESP-DP-001-002	1-2'	20-Jul-05	12:37	20-Jul-05	< 0.10	103	110	-
11002	ESP-DP-001-002 ESP-DP-002-001	0-1'	20-Jul-05 20-Jul-05	12:45	20-Jul-05	1.6	101	102	-
11003	ESP-DP-002-001	1-2'	20-Jul-05	12:47	20-Jul-05	< 0.10	104	114	\vdash
11004	ESP-DP-003-001	0-1'	20-Jul-05	12:50	20-Jul-05	3.6	102	101	H
11005	ESP-DP-003-001	1-2'	20-Jul-05	12:52	20-Jul-05	0.15	103	112	-
11000	ESP-DP-003-002	0-1'	20-Jul-05	13:00	20-Jul-05	1.7	101	107	
11007	ESP-DP-004-001	1-2'	20-Jul-05	13:03	20-Jul-05	0.36	101	110	├
11008	ESP-DP-004-002 ESP-Duplicate	1-2	20-Jul-05	13.03	20-Jul-05	0.52	100	106	H
11009	ESP-DP-005-001	0-1'	20-Jul-05	13:10	20-Jul-05	0.95	100	105	-
11010	ESP-DP-005-001	1-2'	20-Jul-05	13:13	20-Jul-05	< 0.10	99.7	109	-
11011	ESP-DP-006-001	0-1'	20-Jul-05	13:19	20-Jul-05	0.33	101	111	-
11012	ESP-DP-006-002	1-2'	20-Jul-05	13:22	20-Jul-05	0.39	103	113	┢╾
11013	ESP-DP-007-001	0-1'	20-Jul-05	13:29	20-Jul-05	0.28	102	112	H
11014	ESP-DP-007-001	1-2'	20-Jul-05	13:31	20-Jul-05	< 0.10	100	109	
11015	ESP-DP-008-001	0-1'	20-Jul-05	15:00	20-Jul-05	< 0.10	104	117	┢
11017	ESP-DP-008-002	1-2'	20-Jul-05	15:03	20-Jul-05	< 0.10	101	108	
11017	ESP-DP-009-001	0-1'	20-Jul-05	15:10	20-Jul-05	< 0.10	100	102	Н
11019	ESP-DP-009-002	1-2'	20-Jul-05	15:14	20-Jul-05	< 0.10	98.8	107	-
11020	ESP-DP-010-001	0-1'	21-Jul-05	15:00	21-Jul-05	< 0.10	98.5	93.9	\vdash
11020	ESP-DP-010-001	1-2'	21-Jul-05	15:03	21-Jul-05	< 0.10	99.2	98.7	
11021	ESP-DP-010-002	0-1'	21-Jul-05	15:09	21-Jul-05	< 0.10	98.2	104	
11023	ESP-DP-011-002	1-2'	21-Jul-05	15:13	21-Jul-05	< 0.10	98.9	96.3	\vdash
11023	ESP-Duplicate	1- <u>Z</u>	21-Jul-05	-	21-Jul-05	< 0.10	100	95.4	
11024	ESP-DP-012-001	0-1'	21-Jul-05	15:18	21-Ju -05	< 0.10	98.1	92.7	
11025	ESP-DP-012-002	1-2'	21-Jul-05	15:20	21-Jul-05	< 0.10	96.1	96.3	П
11020	ESP-DP-013-001	0-1'	21-Jul-05	15:25	21-Jul-05	0.31	99.2	94.1	Τ
11027	ESP-DP-013-002	1-2'	21-Jul-05	15:28	21-Jul-05	< 0.10	96.5	97.8	Г
11029	ESP-DP-014-001	0-1'	21-Jul-05	15:34	21-Jul-05	0.50	98.1	93.6	Γ
11029	ESP-DP-014-002	1-2'	21-Jul-05	15:37	21-Jul-05	< 0.10	97.8	97.4	T
11030	ESP-DP-015-001	0-1'	21-Jul-05	15:40	21-Jul-05	0.12	100	97.1	Г
11031	ESP-DP-015-002	1-2'	21-Jul-05	15:43	21-Jul-05	< 0.10	99.2	99.2	Γ

NOTES:

A = Acid Treated.

Surrogate recovery criteria 60-140% unless sample is acid treated. Surrogate recovery criteria 75-175% if sample is acid treated.

Table 2

Water Sample Results – July

Table 2 Kuhlman Electric Crystal Springs, Mississippi PCB Concentrations as Aroclor 1260 Detected

						Field Labo	ratory	
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1311	ESP-FB-001		20-Jul-05	12:30	20-Jul-05	< 0.25	113	115

Table 3
Soil QC Samples - July

Table 3 QC Results

Lab # associated with qc samples:

ll001 through li019

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

D065

D065

839

839

Date Analyzed:

7/20/05

7/20/05

7/20/05

7/20/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	104	106	-2%	< 0.10	105

Table 3 QC Results

Lab # associated with qc samples:

II020 through II032

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

11023

11023

840

840

Date Analyzed:

7/21/05

7/21/05

7/21/05

7/21/05

Compound	% Rec	% Rec	% RPD	mg/kg	% Rec
PCB as 1260	103	99.4	4%	< 0.10	98.8

Table 4 Water QC Samples - July

Table 4 QC Results

Lab # associated with qc samples:

W1311

Matrix

Matrix

Spike

Spike

Duplicate

Blank

LCS

W1309

W1309

Date Analyzed:

7/20/05

7/20/05

7/20/05

7/20/05

Compound	% Rec	% Rec	% RPD	ug/L	% Rec
PCB as 1260	116	111	4%	< 0.25	115

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

\$	
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CHAIN OF CUSTODY

ESP

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Turn Around (circle one) Normal 7 Page

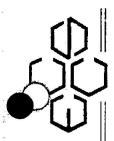
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TLOOP Date/Time/05/ Look I Coot 500 II Troot [TOO] 700 II 10077 TIOIT Laboratory TIOLO 口00分 Number liott Date/Time: Quote No. Drith Comments 1-0 ,1-0 Report Due: 100 1-2 7-1 7 7-1 Invoice To: Company: 1-0 1-0 Address: P.O. No.: 10 6 Receipt Temp: Received By: Received By: releast or とう みつ こり Requested Analysis 1/2/05 1400 1 Sees Company. MARKTIN 4 Date/Time: Date/Time Bottles | Preserv* 45 FAX 608-221-4889 Mail Report To: Address: Total Matrix Seal #'s Phone 608-221-8700 Chuch ful 1300 1310 1319 7251 Jules 7521 1317 1247 1237 Date Time -S.4.23 1250 1303 SORINGS Relinquished By: Intact/Not Intact ELECTRIC くみどに年り 200-500-60-85 ESP- DP-005-001 159-00-001-001 CSP-08-001-002 E16-18-004-002 D=HNO3 E=EnCore F=Methanol インドロボブ ESP-00-002-002 ESP-DP-001-001 ESP-11 -003-002 ESP-09-004-001 ESP-08 -003-001 ESP-139 -002-001 Custody Seal: Present/Absent A=None B=HCL C=H2SO4 ESP-DuplicATE *Preservation Code Sample Description G=NaOH O=Other(Indicate) Sampled By (Print): Project Location: Project Name: Project Number

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Temp Blank Y N

Shipped Via:



Phone 608-221-8700

2525 Advance Road

Page Z of C.
Turn Around (circle one) Normal Rush 013226 2 of 2 Report Due: S S CHAIN OF CUSTODY Pucket ST Madlson, WI 53718 FAX 608-221-4889

- [Mail Report To:	ort To:			Invoice To:	
Project Name: Kuthuth	בובושנור		Company:	. MA	MARTIN - SCHELE	و	Company:	
Project Location: CV2457#L	520111003		Address:				Address:	
Sampted By (Print):	0 0 0 0			2				
Chuc	K I Let						P.O. No.: Quote No.:	
O Common Decoration	Collection	Matrice	Total	,,	Analysis	S	4	Laboratory
Sample Description	Cale	Maux	Sallinos	Lieserv	Rednested	led	Comments	Number
ESP-DP-006-002	Halor 1322	S	~	N#	Pese		1.5	II 013
ESP-DP-007-001	1329		~	-			1-0	FE 014
E19-00-007-002	(33)						2-1	TT 015
Est-08-008-001	1500						1-9	TI 016
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*Preservation Code	Relinquished By:	1			Date/Time:	Received By:	11110	Date/Time:
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D=HNO3 E=EnCore F=Methanol	Relinquished By:				Date/Time:	Received By.		Date/Time:
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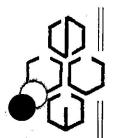
Madison, WI 53718 FAX 608-221-4889

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	Phone 608-221-8700	FAX 608-221-4889	889	Puckell ST	5.7	Report Due:	
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Project Name: Kuttutt	ELECTRIC	Company:	MAKTIN	N+ SCACLE		Company:	
Project Location: (MITML	SYKINES	Address:				Address.	
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ETP-013-001	1551					,1-0	Trost
EST-08-013-002	3251					1-21	LIOIP
100- HO-DO-JSA	hest					0-11	TI 029
EG- 110-014 -002	£5,1					1-2,	II 030
ESP- 179- 015-001	15.40)) ~)			0-1,	II 031
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A=None B=HCL C=H2SO4	11/201		12/	65 160°	火が火	Muster	7/600
D=HNO3 E=EnCore F=Methanol G=NaOH O=Other(Indicate)	Relinquished By:		Date/Time:		Received By:	,	Date/Time:
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Environmental Chemistry Consulting Services, Inc. 2525 Advance Road

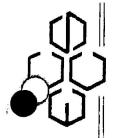
Phone 608-221-8700

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Page 2 of 2.
Turn Around (circle one) Normal Rush
Report Due: 013229 CHAIN OF CUSTODY ESP Puckett ST Madison, WI 53718 FAX 608-221-4889

Project Number:			Mail Repo	Report To:			Invoice To:	
Project Name: Kuttunto	ELECTIFIC	J	ompany	MARK	Company. MANCTING SCA	SUAGLE	Company	
Project Location: (PM STAL SPR INCS	SPRIDES	4	Address:				Address:	
Sampled By (Print):	0 6000	4				P		
Chuc	214						P.O. No.: Quote No.:	
Sample Description	Coffection Date Time	Matrix	Total Bottles	Preserv*		Analysis Requested	Dyth Comments	Laboratory
ESP-DP-015-002	Ffrilos 1543	٢,		NA	RB		1-2,	IE 032
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Phone 608-221-8700

2525 Advance Road

Normal Rush 013218 Turn Around (circle one) ō Report Due: Page___ ė į CHAIN OF CUSTODY Madison, WI 53718 FAX 608-221-4889

Date/Lime: 7 Laboratory Number 2131 Date/Time: WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER Quote No.: Comments Invoice To: Company: P.O. No.: Address: Receipt Temp. Received By: Received By Requested Analysis Company: MARTIN+ CLACLE PCRS Date/Time: Date/Time: Preserv* え Mail Report To: Bottles Address: Total Matrix Seal #'s 3 That Per Flushe 1230 Time Collection Date Time בת נשונה CHYSTAL SYRIUST Relinquished By: Relinquished By: Intact/Not Intact Project Name: Kuttunt D=HNO3 E=EnCore F=Methanol Present/Absent C=H2S04 Sample Description *Preservation Code ESP-F8-001 G=NaOH O=Other(Indicate) Sampled By (Print): A=None B=HCL Project Location: Project Number. Custody Seal: Shipped Via:

Appendix B

FEDEX shipping label for Paradigm Labs

Try online shipping at fedex com Questions? Visit our Web site at fedex.com

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting chains.



Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

Please specify any special reporting State Certification Requested TERMS AND CONDITIONS coc# 44654 Fr. Frequirements SEE REVERSE FOR Comments: とませい CAME 1-0 Other. Report To: Invoice To: 7.80 1.45 1.45 600 II TIOIT TICOLI SC S Chain-of Custody Record & Analytical Request Time | Temperature --solor/E Analyses P.O. Number: Date: Turnaround: Job Number: Date ELECTRIC Received By Contact: Pobekt MAATIN 150 × Project ID: Fullunged Preservatives PARADIGM ANALYTICAL LABORATORIES, INC. Phone: Fax: \$ × × Phone: (910)-350-1903 FAX: (910)-350-1557 Date | Time 5500 Business Drive, Wilmington, NC 28405 7/20/02/ کر ESP-08-001-001 7/20/05 1232 5151 Solos/ 1201-00 1216 Client: MARTIN - SLACIC Address: BLACIL MAINTAIN Est- by PLICATE 7/20/05 Relinquished By Thus les O.M. Feel Sample ID Quote #: Address:

Please specify any special reporting State Certification Requested TERMS AND CONDITIONS SEE REVERSE FOR . requirements Comments: Other. Strack 11-0 1-0 Invoice To: SC Report To: JI ROW TT024 FT 029 TIOZO S * **Temperature** Time Analyses P.O. Number: Date: Job Number: Contact: Lobelt MARTIN Turnaround: Date Project ID: Kultunty Electric Received By Re × X × . **Preservatives** Fax: Phone: 7 × × × 146 Date Time Phone: (910)-350-1903 FAX: (910)-350-1557 Time Matrix V 5 7/28/5 7 MAKTIN+ SCHOLLE 0051 | so | 12/E ESP-08-014-001 7/21/05 1534 Address: Butte mm JTAIN 3/21/02 Relinquished By Sample ID ESP-010-001 EST- DUPLICATE Quote #: Address: Client:

coc# 44655

Chain-of Custody Record & Analytical Request

PARADIGM ANALYTICAL LABORATORIES, INC.

5500 Business Drive, Wilmington, NC 28405

Please specify any special reporting - of State Certification Requested SEE REVERSE FOR TERMS AND CONDITIONS requirements Comments: _ Other_ いまれて J. TABLE Report To: Invoice To: _ SC 2/31 20617 世 NC Temperature 7/20/05/4 Analyses MAKEIN Turnaround: Time P.O. Number: Date: Job Number: Date Project ID: Kuttunto Electric 1 Per × Received By Contact: 1666RT Preservatives Phone: _ Fax: Ž Phone: (910)-350-1903 FAX: (910)-350-1557 Time State of Matrix 3 Date Address: ELACK MOUNTAIN NC Client: MAKTIN - GACLC 7/20 Por 12.50 Date 一人の一人 はい Relinquished By Sample D · 1000年 北京1001 EST-F8-001 Chik on Address: Quote #:

coc# 44653

Chain-of Custody Record & Analytical Request

PARADIGM ANALYTICAL LABORATORIES, INC.

5500 Business Drive, Wilmington, NC 28405

5500 Business Drive Wilmington, North Carolina 28405 (910) 350-1903 Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-327

Client Project: Kuhlman Electric

ALTALITATION OF 2005

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Analytical Laboratories, Inc.

Laboratory Director

Date

J. Patrick Weaver

Results for PCBs by EPA 8082

Client Sample ID: ESP-DP-001-001

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-327-1B

Lab Project ID: G442-327

Matrix: Soil %SOLIDS: 90.7

Sample Wt/Vol: 10.72 g ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/20/05 12:32

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	103	BQL
Aroclor-1221	103	BQL
Aroclor-1232	103	BQL
Aroclor-1242	103	BQL
Aroclor-1248	103	BQL
Arocior-1254	103	BQL
Aroclor-1260	103	567
Aroclor-1262	103	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	80	80

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 8082_LIMS_v1 4

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: ESP-Duplicate-II009

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-327-2B

Lab Project ID: G442-327

Matrix: Soil %SOLIDS: 91.1

Sample Wt/Vol: 10.64 g ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/20/05 0:00

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

4	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Arocior-1016	103	BQL
Arocior-1221	103	BQL
Arocior-1232	103	BQL
Aroclor-1242	103	BQL
Aroclor-1248	103	BQL
Aroclor-1254	103	BQL
Aroclor-1260	103	534
Aroclor-1262	103 .	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	83	83

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: ______

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: ESP-DP-006-001

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-327-3B

Lab Project ID: G442-327

Matrix: Soil

Sample Wt/Vol: 10.21 g

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/20/05 13:19

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	112	BQL
Aroclor-1221	112	BQL
Aroclor-1232	112	BQL
Aroclor-1242	112	BQL
Aroclor-1248	112	BQL
Aroclor-1254	112	BQL
Aroclor-1260	112	766
Aroclor-1262	112	BQL

Surrogate Spike Recoverles	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	71	71

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: Method Blank

Client Project ID:

Lab Sample ID: PB3294

Lab Project ID:

Matrix: SOIL

Sample Wt/Vol: 10.0 g

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected:

Date Received:

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	61	61

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

Reviewed By: Pro

QC Results for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-327-1B

Batch ID: 3294

Analyzed By: CLP Matrix: Soil

MS/MSD

Analyte	Sample	Spiked	MS	REC	Spiked	MSD	REC	RPD
	ug/KG	ug/KG	ug/KG	%	ug/KG	ug/KG	%	%
Aroclor-1260	567	1060	1660	103	1070	1770	112	8.37

LCS

Analyte	Spiked	Result	REC	Limits	
	ug/KG	ug/KG	%	Lower	Upper
Arocior-1260	1000	1140	114	70	130

Comments:

= Outside Control Limits

Reviewed by: PHP

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = miltigram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.011404.1

Please specify any special reporting State Certification Requested Page / of SEE REVERSE FOR TERMS AND CONDITIONS 6442-327 requirements Comments: Other _ 1 1-0 CAME SAME 1-0 Report To: Invoice To: SC TT012 LT 009 TICOL S -so/or/£ 1 Analyses 9111 Date: Turnaround: Job Number: P.O. Number: 7/2/105 ORIGINAL Project ID: Futtuntia Electric Contact: Lobert MARTIN 3 × × × Preservatives Phone: _ Fax: Z × × Date The 1/2/5 1/20 5 4 4 مرا Client: MARTIN - SLAC LE ESP-08-001-001 Floolos 1232 6181 Solos/ 100-000-da-857 Address: Butel Mainthil Ell-byflicATE Holor Refinential by hale o. R. fee Sample ID Address: Quote #: 8 of 8

coc# 44654

Chain-of Custody Record & Analyr.cal Ite, uest

PARADIGM ANALYTICAL LABORATORIES, INC.

Phone: (910)-350-1903 FAX: (910)-350-1557

5500 Business Drive, Wilmington, NC 28405

5500 Business Drive Wilmington, North Carolina 28405 (910) 350-1903

Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-329

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Analytical Laboratories, Inc.

Laboratory Director

Date

J. Patrick Weaver

Results for PCBs by EPA 8082

Client Sample ID: JMP-DP-001-001 Client Project ID: Kuhlman Electric

Lab Sample ID: G442-329-1C

Lab Project ID: G442-329 Matrix: Soil

%SOLIDS: 86.0

Sample Wt/Vol: 10.15 g ColumnID: STX-CLPest Report Basis: Dry Weight

Analyzed By: CLP

Date Collected: 7/14/05 12:35 Date Received: 7/21/05

Date Analyzed: 7/26/05 Date Extracted: 7/25/05

Dilution: 1

Compound Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	Quantitation Limit ug/KG 114 114 114 114 114 114	Result ug/KG BQL BQL BQL BQL BQL BQL
Aroclor-1260 Aroclor-1262	†14 114 114	BQL BQL BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	91	91

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By:

Results for PCBs by EPA 8082

Client Sample ID: JMP-DUP-HH011 Analyzed By: CLP
Client Project ID: Kuhlman Electric Date Collected: 7/14/05 0:00
Lab Sample ID: G442-329-2C Date Received: 7/21/05
Lab Project ID: G442-329 Date Analyzed: 7/26/05
Matrix: Soil %SOLIDS: 85.9 Date Extracted: 7/25/05
Sample Wt/Vol: 10.48 g ColumnID: STX-CLPest Dilution: 1

Report Basis: Dry Weight

	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Aroclor-1016	111	BQL
Aroclor-1221	111	BQL
Aroclor-1232	111	BQL
Aroclor-1242	111	BQL
Aroclor-1248	111	BQL
Aroclor-1254	111	BQL
Aroclor-1260	111	BQL
Aroclor-1262	111	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent	
	Added	Result	Recovered	
TCMX	100	66	66	

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Results for PCBs by EPA 8082

Client Sample ID: JMP-DP-006-001

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-329-3C

Lab Project ID: G442-329

Matrix: Soil

Sample Wt/Voi: 10.75 g ColumnID: STX-CLPest

Client Project ID: JMP-DP-006-001

Analyzed By: CLP

Date Collected: 7/14/05 14:50

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Dilution: 1

Report Basis: Dry Weight

Compound Aroclor-1016	Quantitation Limit ug/KG 104	Result ug/KG
Aroclor-1221 Aroclor-1232	104	BQL BQL
Aroclor-1242	104 104	BQL BQL
Aroclor-1248 Aroclor-1254	104 ·	BQL BQL
Aroclor-1260 Aroclor-1262	104 104	BQL BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	87	87

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: For 14

Results for PCBs by EPA 8082

Client Sample ID: JMP-DP-010-002

Analyzed By: CLP

Client Project ID: Kuhlman Electric Lab Sample ID: G442-329-4C

Date Collected: 7/14/05 15:49

Lab Project ID: G442-329

Date Received: 7/21/05 Date Analyzed: 7/26/05

Matrix: Soil

Date Extracted: 7/25/05

Sample Wt/Vol: 10.79 g

Dilution: 1

Report Basis:	Dry	We	ight
---------------	-----	----	------

Quantitation	Result
Limit ug/KG	ug/KG
104 .	BQL
104	BQL
	104 104 104 104 104 104

%SOLIDS: 88.7

ColumnID: STX-CLPest

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	89	89

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: ______

Results for PCBs by EPA 8082

Client Sample ID: Method Blank

Client Project ID:

Lab Sample ID: PB3294

Analyzed By: CLP

Date Collected:

Date Received:

Lab Project ID: Date Analyzed: 7/26/05
Matrix: SOIL %SOLIDS: 100.0 Date Extracted: 7/25/05

Sample Wt/Vol: 10.0 g ColumnID: STX-CLPest Dilution: 1

Report Basis: Dry Weight

_	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent	
	Added	Result	Recovered	
TCMX	100	61	61	

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

QC Results for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-327-1B

Batch ID: 3294

Analyzed By: CLP Matrix: SOIL

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %	Spiked ug/KG	MSD ug/KG	REC %	RPD
Aroclor-1260	567	1060	1660	103	1070	1770	112	8.37

LCS

Analyte	Spiked	Spiked Result	REC	Limits	
	ug/KG	ug/KG	%	Lower	Upper
Aroclor-1260	1000	1140	114	70	130

Comments:

= Outside Control Limits

Reviewed by: PN

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.011404.1

6 10 6 State Certification Requested SEE REVERSE FOR TERMS AND CONDITIONS coc# 46363 5442-329 1-0 Page ___ スカ SAME Other_ 12-1 1-1 Invoice To: Samo Report To: HHOIL Mossic SC MAD! HHOIL 14001 NC Chain-of Custody Record & Analytical Request Turnaround: Lockers L Date: 7/10/ Amstrack Time Job Number: P.O. Number: 1/2/100 Pate Project ID: Kullun AN GLECTELC ORIGINAL Contact: ROBS CT MARTIN 152 × ~ Received By Preservatives PARADIGMANALYTICAL LABORATORIES, INC. Fax Phone: X × × × Phone: (910)-350-1903 FAX: (910)-350-1557 Time 5500 Business Drive, Wilmington, NC 28405 1/2/s 140 8 Client: MARTIN BSLABUS Date Address: RACK MOUNTAIN, N.C. N30 6451 JMP-02-00-100 7/1/05/1235 Date Relinquished By Chuk, O.M. Pee JWK-01-010-001 JAMP-20-001-001 ANG-OND Address: Quote #:

5500 Business Drive Wilmington, North Carolina 28405 (910) 350-1903 Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-330

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

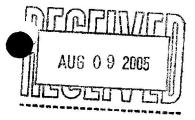
Sincerely,

Paradigm Analytical Laboratories, Inc.

Laboratory Director

Date

J. Patrick Weaver



Results for PCBs by EPA 8082

Client Sample ID: CSP-DP-171-001

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-330-1C

Lab Project ID: G442-330

Matrix: Soil %SOLIDS: 85.0

Sample Wt/Vol: 10.07 g ColumnID: STX-CLPest Report Basis: Dry Weight

Analyzed By: CLP

Date Collected: 7/15/05 10:08

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Dilution: 1

Compound Aroclor-1016 Aroclor-1221	Quantitation Limit ug/KG 117	Result ug/KG BQL
Aroclor-1232	117 117	BQL BQL
Aroclor-1242 Aroclor-1248	117 117	BQL BQL
Aroclor-1254 Aroclor-1260	117 117	BQL
Aroclor-1262	117	988 BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	81	81

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: Phy

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: CSP-Duplicate-C219

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-330-2C

Lab Project ID: G442-330

Matrix: Soil

Sample Wt/Vol: 10.35 g

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/15/05 0:00

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound Aroclor-1016	Quantitation Limit ug/KG 113	Result ug/KG BQL
Aroclor-1221	113	BQL
Aroclor-1232	113	BQL
Aroclor-1242	113	BQL
Aroclor-1248	113	BQL
Aroclor-1254	113	BQL
Aroclor-1260	113	2130
Aroclor-1262	113	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	95	95

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

Reviewed By: FN BOS2_LIMS_VI 4

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: CSP-DP-178-001 Analyzed By: CLP Client Project ID: Kuhlman Electric Date Collected: 7/15/05 13:28 Lab Sample ID: G442-330-3C Date Received: 7/21/05 Lab Project ID: G442-330 Date Analyzed: 7/26/05 Matrix: Soil %SOLIDS: 90.5 Date Extracted: 7/25/05 Sample Wt/Vol: 10.48 g ColumnID: STX-CLPest Dilution: 1

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	105	BQL
Aroclor-1221	105	BQL
Aroclor-1232	105	BQL
Aroclor-1242	105	BQL
Aroclor-1248	105	BQL
Aroclor-1254	105	BQL
Aroclor-1260	105	1310
Aroclor-1262	105	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	65	65

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: _____ 8082_LIMS_v1 4

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: CSP-DP-182-001

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-330-4C

Lab Project ID: G442-330

Matrix: Soil

Sample WtVol: 10.23 g ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/15/05 14:58

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	104	BQL
Aroclor-1221	104	BQL
Aroclor-1232	104	BQL
Aroclor-1242	104	BQL
Aroclor-1248	104	BQL
Aroclor-1254	104	BQL
Arocior-1260	104	793
Aroclor-1262	104	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	109	109

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: ______

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: CSP-DP-186-001 Client Project ID: Kuhlman Electric Lab Sample ID: G442-330-5C

Matrix: Soil

Lab Project ID: G442-330

%SOLIDS: 94.6

Sample Wt/Vol: 10.31 g ColumnID: STX-CLPest Report Basis: Dry Weight

Analyzed By: CLP

Date Collected: 7/15/05 15:38 Date Received: 7/21/05

Date Analyzed: 7/26/05 Date Extracted: 7/25/05

Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	102	BQL
Aroclor-1221	102	BQL
Aroclor-1232	102	BQL
Aroclor-1242	102	BQL
Aroclor-1248	102	BQL
Aroclor-1254	102	BQL
Aroclor-1260	102	BQL
Aroclor-1262	102	BOL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	80	80

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: _____

8082_LIM5_v1 4

Results for PCBs

by EPA 8082

Client Sample ID: CSP-DP-188-001 Client Project ID: Kuhlman Electric

Lab Sample ID: G442-330-6C Lab Project ID: G442-330

Matrix: Soil

%SOLIDS: 89.9

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/18/05 16:05

Date Received: 7/21/05 Date Analyzed: 7/26/05 Date Extracted: 7/25/05

Dilution: 1

Sample Wt/Vol: 10.71 g Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	104	BQL
Aroclor-1221	104	BQL
Aroclor-1232	104	BQL
Aroclor-1242	104	BQL
Aroclor-1248	104	BQL
Aroclor-1254	104	BQL
Aroclor-1260	104	BQL
Aroclor-1262	104	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	95	95

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: _

Results for PCBs by EPA 8082

Client Sample ID: CSP-Duplicate-C257

Client Project ID: Kuhlman Electric

Lab Sample ID: G442-330-7C

Lab Project ID: G442-330

Matrix: Soil

Sample Wt/Voi: 10.22 g

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/18/05 0:00

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Date Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Arocior-1016	111	BQL
Aroclor-1221	111	BQL
Aroclor-1232	111	BQL
Aroclor-1242	111	BQL
Aroclor-1248	111	BQL
Aroclor-1254	111	BQL
Aroclor-1260	111	BQL
Aroclor-1262	111	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	93	93

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: ________

Results for PCBs

by EPA 8082

Client Sample ID: CSP-DP-196-001

Client Project ID: Kuhlman Electric

Lab Sample ID. G442-330-8C

Lab Project ID: G442-330

Matrix: Soil

Sample Wt/Vol: 10.39 g

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected: 7/19/05 10:10

Date Received: 7/21/05

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

•	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Aroclor-1016	101	BQL
Aroclor-1221	101	BQL
Aroclor-1232	101	BQL
Aroclor-1242	101	BQL
Aroclor-1248	101	BQL
Aroclor-1254	101	BQL
Aroclor-1260	101	BQL
Aroclor-1262	101 .	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	104	104

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 19-90 8062_LIMS_V1 4

Results for PCBs by EPA 8082

Client Sample ID: CSP-Duplicate-C269
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-330-9C
Lab Project ID: G442-330
Matrix: Soil
Sample Wt/Vol: 10.63 g
ColumnID: STX-CLPest

Analyzed By: CLP
Date Collected: 7/19/05 0:00
Date Received: 7/21/05
Date Analyzed: 7/26/05
Date Extracted: 7/25/05

Report Basis: Dry Weight

	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Aroclor-1016	98.6	BQL
Aroclor-1221	98.6	BQL
Aroclor-1232	98.6	BQL
Aroclor-1242	98.6	BQL
Aroclor-1248	98.6	BQL
Aroclor-1254	98.6	BQL
Aroclor-1260	98.6	BQL
Aroclor-1262	98.6	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	117	117

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Results for PCBs by EPA 8082

Client Sample ID: Method Blank

Client Project ID:

Lab Sample ID: PB3294

Lab Project ID:

Matrix: SOIL

Sample Wt/Vol: 10.0 g

Report Basis: Dry Weight

Analyzed By: CLP

Date Collected:

Date Received:

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Quantitation Result Compound Limit ug/KG ug/KG Aroclor-1016 100 BQL Aroclor-1221 100 BQL Aroclor-1232 100 BQL Aroclor-1242 100 BQL Aroclor-1248 100 BQL Aroclor-1254 100 BQL Aroclor-1260 100 BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	61	61

100

Comments:

Aroclor-1262

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 8082_LIMS_v1 4

BQL

QC Results for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-327-1B

Batch ID: 3294

Analyzed By: CLP Matrix: SOIL

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %	Spiked ug/KG	MSD · ug/KG	REC %	RPD
Aroclor-1260	567	1060	1660	103	1070	1770	112	8.37

LCS

Analyte	Spiked	Result	REC	Lin	nits
	ug/KG	ug/KG	%	Lower	Upper
Aroclor-1260	1000	1140	114	70	130

Comments:

= Outside Control Limits

Reviewed by: 12-14

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

- Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.011404.1

ALYTICAL LABORATORIES, INC.

₩1.025 05 04:47p Crystal Springs Office 601-892-0944 p.2 Please specify any special reporting requirements State Certification Requested SEE REVERSE FOR TERMS AND CONDITIONS coc# 46364 Comments Page / Space Spark _ Other _ 11-0 ,1-0 11-0 ,1-0 -5 0 Involce To: Report To: ပ္လင္က #10811 222 232) 6220 2522 6217 C 232 6223 122 6120 Chain-of Custody Record & Analytical Request NC. Temperature 7/20/05 E Analyses Turnaround: P.O. Number: Date: The Job Number: Date たけらがら CLIENT COPY Pet × X × × MARTIN - SCACIE Project ID: Kultunh Received By Contact: LIFE Preservatives Fax Phone: X $\overline{\mathbf{X}}$ × × X X hone: (910)-350-1903 FAX: (910)-350-1557 Jusiness Drive, Wilmington, NC 28405 Time 7 75 5 1/6/5 9-19-178-41 7/1/1× 1329 Date 59.01-171-001 7/15/05 1008 9-21-166-00-191-10-9 58-128-188-001 7-118105 1605 05/1/t (m-2d/-00-1. 1010 ddress: 5th Marytin 76896 7/19/65 7/19 for 开发 Relinquished By TP-D-PLYCATE 1-bufucent st-dry come P- 196-001 lient: Note #:

5500 Business Drive Wilmington, North Carolina 28405 (910) 350-1903 Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-331

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Analytical Laboratories, Inc.

J. Patrick Weaver

Results for PCBs by EPA 8082

Client Sample ID:	GTP-DP-0	23-001		Analyzed By:	CLP
Client Project ID:				Date Collected:	7/14/05 10:38
Lab Sample ID:				Date Received:	7/21/05
Lab Project ID:				Date Analyzed:	7/26/05
Matrix:		#% SOLIDS:	89.4	Date Extracted:	7/25/05
Sample Wt/Vol:	10.23 g	ColumnID:	STX-CLPest	Dilution:	1
Penort Basis		•			

Report Basis: Dry Weight

	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Aroclor-1016	109	BQL
Aroclor-1221	109	BQL
Aroclor-1232	109	BQL
Aroclor-1242	109	BQL
Aroclor-1248	109	BQL
Aroclor-1254	109	BQL
Aroclor-1260	109	1050
Aroclor-1262	109	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	90	90

Comments:

BQL = Below Quantitation Limit NA = Not applicable, surrogate diluted out.

Reviewed By: 6082 LIMB_v1 4

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: GTP-Dup-GG055

Client Project ID: Kuhlman Electric
Lab Sample ID: G442-331-2C
Lab Project ID: G442-331

Matrix: Soil
Sample Wt/Vol: 10.16 g
ColumniD: STX-CLPest

Analyzed By: CLP
Date Collected: 7/14/05 0:00
Date Received: 7/21/05
Date Analyzed: 7/26/05
Date Extracted: 7/25/05
Date Extracted: 7/25/05

Report Basis: Dry Weight

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	109	BQL
Aroclor-1221	109	BQL
Aroclor-1232	109	BQL
Aroclor-1242	109	BQL
Arocior-1248	109	BQL
Aroclor-1254	109	BQL
Aroclor-1260	109	860
Aroclor-1262	109	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	94	94

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 200

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: Method Blank

Client Project ID:

Lab Sample ID: PB3294

Lab Project ID:

Matrix: SOIL

Sample Wt/Vol: 10.0 g

ColumnID: STX-CLPest

Analyzed By: CLP

Date Collected:

Date Received:

Date Analyzed: 7/26/05

Date Extracted: 7/25/05

Report Basis: Dry Weight

_	Quantitation	Result
Compound	Limit ug/KG	ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100 .	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	61	61

Comments:

BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

QC Results for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-327-18

Batch ID: 3294

Analyzed By: CLP Matrix: SOIL

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %	Spiked ug/KG	· MSD ug/KG	REC %	RPD %
Aroclor-1260	567	1060	1660	103	1070	1770	112	8.37

LCS

Analyte	Spiked	Result	REC	Lin	nits
	ug/KG	ug/KG	%	Lower	Upper
Aroclor-1260	1000	1140	114	70	130

Comments:

= Outside Control Limits

Reviewed by:

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.011404.1

Phone: (910)-350-1903 FAX: (910)-350-1557 5500 Business Drive, Wilmington, NC 28405

Chain-of Custody Record & Analytical Request

coc# 46362

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5500 Business Drive Wilmington, North Carolina 28405 (910) 350-1903 Fax (910) 350-1557

Mr. Robert Martin
Martin & Slagle
Box 1023
Black Mountain NC 28711

Report Number: G442-328

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

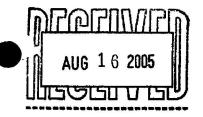
Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Analytical Laboratories, Inc.

Laboratory Director

J. Patrick Weaver



Results for PCBs

by EPA 8082

Client Sample ID: CSP-FB-009

Client Project ID: Kuhlman Electric

Analyzed By: CLP

Date Collected: 7/18/05 16:17

Lab Sample ID: G442-328-1C

Date Received: 7/21/05

Lab Project ID: G442-328

Date Extracted: 7/26/05

Sample Wt/Vol: 500 ML ColumnID: STX-CLPest

Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Arocior-1016	BQL	1.00	1	07/28/05
Aroclor-1221	BQL	1.00	1	07/28/05
Aroclor-1232	BQL	1.00	1	07/28/05
Aroclor-1242	BQL	1.00	1	07/28/05
Aroclor-1248	BQL	1.00	1	07/28/05
Aroclor-1254	BQL	1.00	1	07/28/05
Aroclor-1260	BQL	1.00	1	07/28/05
Aroclor-1262	BQL.	1.00	1	07/28/05

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	49	49

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

Reviewed By

^{*}Sample was quantitated as Aroctor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: Method Blank

Analyzed By: CLP

Client Project ID:

Date Collected: Date Received:

Lab Sample ID: PB3299

Date Received.

Lab Project ID:

Date Extracted: 7/26/05

Sample Wt/Vol: 500 ML ColumnID: STX-CLPest

Matrix: WATER

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date - Analyzed
Aroclor-1016	BQL	1.00	1	07/28/05
Aroclor-1221	BQL	1.00	1	07/28/05
Aroclor-1232	BQL	1.00	. 1	07/28/05
Aroclor-1242	BQL	1.00	1	07/28/05
Aroclor-1248	BQL	1.00	1	07/28/05
Aroclor-1254	BQL	1.00	1	07/28/05
Aroclor-1260	BQL	1.00	1	07/28/05
Aroclor-1262	BQL	1.00	i	07/28/05

Surrogate Spike Recoverles	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	52	52

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

Reviewed By:

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5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-332

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

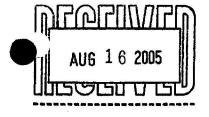
Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Apalytical Laboratories, Inc.

Laboratory Director

J. Patrick Weaver



Results for PCBs by EPA 8082

Client Sample ID: ESP-FB-001

Analyzed By: CLP

Client Project ID: Kuhlman Electric

Date Collected: 7/20/05 12:30

Lab Sample ID: G442-332-1B

Date Received: 7/21/05

Lab Project ID: G442-332

Date Extracted: 7/26/05

Sample Wt/Vol: 500 ML ColumnID: STX-CLPest

Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Aroclor-1016	BQL	1.00	1	07/28/05
Aroclor-1221	BQL	1.00	1	07/28/05
Aroclor-1232	BQL	1.00	. 1	07/28/05
Aroclor-1242	BQL	1.00	1	07/28/05
Aroclor-1248	BQL	1.00	1	07/28/05
Aroclor-1254	BQL	1.00	1	07/28/05
Aroclor-1260	BQL	1.00	1	07/28/05
Aroclor-1262	BQL	1.00	1	07/28/05

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
DBC	100	47	47

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: Method Blank

Analyzed By: CLP

Client Project ID:

Date Collected:

Lab Sample ID: PB3299

Date Received:

Lab Project ID:

Date Extracted: 7/26/05

Sample	WVVOI:	500 ML	ColumniD:	STX-CLPest	

Matrix: WATER

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Aroclor-1016	BQL	1.00	1	07/28/05
Aroclor-1221	BQL	1.00	1	07/28/05
Aroclor-1232	BQL	1.00	· 1	07/28/05
Aroclor-1242	BQL	1.00	1	07/28/05
Aroclor-1248	BQL	1.00	1	07/28/05
Aroclor-1254	BQL	1.00	1	07/28/05
Aroclor-1260	BQL	1.00	1	07/28/05
Aroclor-1262	BQL	1.00	1	07/28/05

Surrogate Spike Recoveries	Spike	Spi ke	Percent
	Added	Result	Recovered
TCMX	100	52	52

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

QC Resuits for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-332-1B

Batch ID: 3299

Analyzed By: CLP Matrix: Water

MS/MSD

Analyte	Sample	Spiked	MS	REC	Spiked	MSD	REC	RPD
	ug/L	ug/L	ug/L	%	ug/L	ug/L	%	%
Aroclor-1260	BQL	37	32.4	87.6	37	36	97.3	10 5

LCS

Analyte	Spiked	Result	REC	Lin	nite
	ug/L	ug/L	%	Lower	Upper
Araclor-1260	10	9.02	90.2	70	130

Comments:

= Outside Control Limits

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

POL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

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5500 Business Drive Wilmington, North Carolina 28405 (910) 350-1903 Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-334

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

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Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.

Laboratory Director

J. Patrick Weaver

AUG 1 6 2005

Results for PCBs by EPA 8082

Client Sample ID: ESP-DP-010-001

Analyzed By: CLP

Client Project ID: Kuhlman Electric

Date Collected: 7/21/05 15:00

Lab Sample ID: G442-334-1B

Date Received: 7/29/05

Lab Project ID: G442-334

Sample Wt/Vol: 10.56 ColumnID: STX-CLPest

Date Extracted: 8/2/05

Matrix: Soil

Report Basis: Dry Weight

%SOLIDS: 69.6

Compound	Result ug/KG	Quantitation Limit ug/KG	Dilution Factor	Date Analyzed
Aroclor-1016	BQL	136	1	08/09/05
Aroclor-1221	BQL	136	1	08/09/05
Aroclor-1232	BQL	136	1	08/09/05
Aroclor-1242	BQL	136	1	08/09/05
Aroclor-1248	BQL	136	1	08/09/05
Aroclor-1254	BQL	136	· 1	08/09/05
Aroclor-1260	BQL	136	1	08/09/05
Aroclor-1262	BQL	136	1	08/09/05

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	118	118

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: ESP-Duplicate-II024 Analyzed By: CLP
Client Project ID: Kuhlman Electric Date Collected: 7/21/05 0:00
Lab Sample ID: G442-334-2B Date Received: 7/29/05
Lab Project ID: G442-334 Date Extracted: 8/2/05
Sample Wt/Vol: 10.15 ColumnID: STX-CLPest Matrix: Soil
Report Basis: Dry Weight %SOLIDS: 73.3

Compound	Result ug/KG	Quantitation Limit ug/KG	Dilution Factor	Date Analyzed
Aroclor-1016	BQL	134	1	08/09/05
Aroclor-1221	BQL	134	1	08/09/05
Aroclor-1232	BQL	134	1	08/09/05
Arocior-1242	BQL	134	1	08/09/05
Aroclor-1248	BQL	134	1	08/09/05
Aroclor-1254	BQL	134	1	08/09/05
Aroclor-1260	BQL	134	1	08/09/05
Aroclor-1262	BQL	134	1	08/09/05

Surrogate Spike Recoveries	Spike Added	Spike Result		Percent Recovered
TCMX	100	113	::•:	113

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs by EPA 8082

Client Sample ID: ESP-DP-014-001 Analyzed By: CLP

Client Project ID: Kuhiman Electric Date Collected: 7/21/05 15:34
Lab Sample ID: G442-334-3B Date Received: 7/29/05
Lab Project ID: G442-334 Date Extracted: 8/2/05
Sample Wt/Vol: 10.48 ColumnID: STX-CLPest Matrix: Soil

Report Basis: Dry Weight %S

%SOLIDS: 81.3

	Result	Quantitation	Dilution	Date
Compound	ug/KG	Limit ug/KG	Factor	Analyzed
Aroclor-1016	BQL	117	1	08/09/05
Aroclor-1221	BQL	117	1	08/09/05
Aroclor-1232	BQL	117	1	08/09/05
Aroclor-1242	BQL	117	. 1	08/09/05
Aroclor-1248	BQL	117	1	08/09/05
Aroclor-1254	BQL	117	1	08/09/05
Aroclor-1260	594	117	1	08/09/05
Aroclor-1262	BQL	117	1	08/09/05

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	112	112

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

Reviewed By: \(\lambda \to \)

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB3352
Date Collected:
Date Received:

Lab Project ID: Date Extracted: 8/2/05
Sample Wt/Vol: 10.0 g ColumnID: STX-CLPest Matrix: SOIL
Report Basis: Dry Weight %SOLIDS: 100.0

Compound	Result ug/KG	Quantitation Limit ug/KG	Dilution Factor	Date Analyzed
•		AND COLUMN TO THE PARTY OF THE	4	08/09/05
Aroclor-1016	BQL	100		A 7 K D AVE 100
Aroclor-1221	BQL	100	1	08/09/05
Aroclor-1232	BQL	100	1	08/09/05
Aroclor-1242	BQL	100	1	08/09/05
Aroclor-1248	BQL	100	1	08/09/05
Aroclor-1254	BQL	100	1	08/09/05
Aroclor-1260	BQL	100	1	08/09/05
Aroclor-1262	BQL	100	1	08/09/05

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	90	90

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

QC Results for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-333-3B Analyzed By: CLP Matrix, SOIL

Batch ID: 3352

MS/MSD

Analyte	Sample ug/L	Spiked ug/L	MS ug/L	REC %	Spiked ug/L	MSD ug/L	REC	RPD
Aroclor-1260	2870	1030	3930	103	1110	4280	127	20.9

LCS

Analyte	Spiked	Result	REC	Lin	nits
	ug/L	ug/L	%	Lower	Upper
Aroclor-1260	1000	1080	108	70	130

Comments:

= Outside Control Limits

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.011404.1

*AKADIGM ANALY HICAL LABORATORIES, INC. 500 Business Drive. Wilmington, NC 28405	LYTICA e. Wilmin	Pton NC	28405	HES, IN	ن ن	Chain	of Custody 1	Record & A	Chain-of Custody Becord & Analytical Demand	coc# 44655 b	
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5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Robert Martin Martin & Slagle Box 1023 Black Mountain NC 28711

Report Number: G442-335

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Analytical Laboratories, Inc.

Laboratory Director

J. Ratrick Weaver

AUG 1 6 2005

Results for PCBs

by EPA 8082

Client Sample ID: GTP-DP-027-001

Client Project ID: Kuhlman Electric

Analyzed By: CLP Date Collected: 7/22/05 11:14

Date Received: 7/29/05

Lab Sample ID: G442-335-1B

Date Extracted: 8/2/05

Sample Wt/Vol: 10.49 ColumnID: STX-CLPest

Lab Project ID: G442-335

Matrix: Soil

Report Basis: Dry Weight

%SOLIDS: 83.6

Compound	Result ug/KG	Quantitation Limit ug/KG	Dilution Factor	Date Analyzed
		114	1	08/09/05
Aroclor-1016	BQL		i	08/09/05
Aroclor-1221	BQL	114	3	
	BQL	114	· 1	08/09/05
Aroclor-1232			4	08/09/05
Aroclor-1242	BQL	114	1	
	BQL	114	1	08/09/05
Arocior-1248		5 (A) (B)	1	08/09/05
Arocior-1254	BQL	114		
	296	114	1	08/09/05
Aroclor-1260			1	08/09/05
Aroclor-1262	BQL	114	•	23.00,00

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	89	89

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: GTP-Duplicate-G6060

Analyzed By: CLP

Client Project ID: Kuhlman Electric

Date Collected: 7/22/05 0:00

Lab Sample ID: G442-335-2B

Date Received: 7/29/05

Lab Project ID: G442-335

Date Extracted: 8/2/05

Sample Wt/Vol: 10.44 ColumnID: STX-CLPest

Matrix: Soil

Report Basis: Dry Weight

%SOLIDS: 82.9

•	Result ug/KG	Quantitation Limit ug/KG	Dilution Factor	Date Analyzed
Compound	757	116	1	08/09/05
Aroclor-1016	BQL	• • • • • • • • • • • • • • • • • • • •	1	08/09/05
Aroclor-1221	BQL	116		
Aroclor-1232	BQL	116	1	08/09/05
	BQL	116	1	08/09/05
Aroclor-1242	S1-01-100-10	(A) A (B)	4	08/09/05
Aroclor-1248	BQL	116	1	• • • • • • • • • • • • • • • • • • • •
Aroclor-1254	BQL	116	1	08/09/05
	221	116	1	08/09/05
Aroclor-1260	,	1 5 5	4	08/09/05
Aroclor-1262	BQL	116	•	55,00,00

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Resuit	Recovered
TCMX	100	85	85

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

^{*}Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Results for PCBs

by EPA 8082

Client Sample ID: Method Blank

Analyzed By: CLP

Client Project ID:

Date Collected:

Lab Sample ID: PB3352

Date Received:

Lab Project ID:

Date Extracted: 8/2/05

Sample Wt/Vol: 10.0 g ColumnID: STX-CLPest

Matrix: SOIL

Report Basis:	Dry	Weight
---------------	-----	--------

%SOLIDS: 100.0

	Result	Quantitation Limit ug/KG	Dilution Factor	Date Analyzed
Compound	ug/KG		4	08/09/05
Arocior-1016	BQL	100	L.	
Aroclor-1221	BQL	100	1	08/09/05
		100	1	08/09/05
Aroclor-1232	BQL	(A) (A) (A)	. 1	08/09/05
Aroclor-1242	BQL	100	•	
	BQL	100	1	08/09/05
Aroclor-1248		100	1	08/09/05
Aroclor-1254	BQL	(A) (B)		08/09/05
Aroclor-1260	BQL	100	1	
Aroclor-1262	BQL	100	1	08/09/05

Surrogate Spike Recoveries	Spike	Spike	Percent
	Added	Result	Recovered
TCMX	100	90	90

Comments:

BQL = Below Quantitation Limit

NA = Not applicable, surrogate diluted out.

QC Results for PCBs by EPA 8082

Client Sample ID: Batch QC Lab Sample ID: G442-333-3B

Batch ID: 3352

Analyzed By: CLP Matrix: SOIL

MS/MSD

Analyte	Sample	Spiked ug/L	MS ug/L	REC %	Spiked ug/L	MSD ug/L	REC %	RPD %
Arocior-1260	ug/L 2870	1030	3930	103	1110	4280	127	20.9

LCS

Amelican	Spiked	Result	REC	Lin	nits
Analyte	ug/L	ug/L	%	Lower	Upper
Arodor-1260	1000	1080	108	70	130

Comments:

= Outside Control Limits

Reviewed by: \(\lambda \rangle \)

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

- Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

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APPENDIX 2

EVALUATION OF ON-SITE ANALYTICAL PCB DETERMINATIONS SUPPORTING PUCKETT STREET PROPERTIES

Puckett Street Properties Crystal Springs, Mississippi

Prepared for

BorgWarner Inc.

Prepared by

MARTIN & SLAGLE GEOENVIRONMENTAL ASSOCIATES, LLC

P.O. Box 1023

118 F Cherry Street

Black Mountain, NC 28711

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1.0 EXECUTIVE SUMMARY

The on-site laboratory, Environmental Chemistry Consulting Services, Inc. (ECCS), successfully analyzed soil samples for polychlorinated biphenyls (PCBs) in support of sampling activities performed at Puckett Street in Crystal Springs Mississippi. Approximately 10 percent of the soil samples collected during the program were split in the field and sent to an off-site laboratory, Paradigm Analytical Laboratories, Inc. (Paradigm), for confirmatory analysis. The on-site laboratory successfully implemented an extensive Quality Assurance/Quality Control (QA/QC) program, a program essentially as comprehensive and strict as those of off-site laboratories (see Appendix 1 for on-site laboratory reports). A careful examination of the on-site laboratory QA/QC results and the results of the split soil samples analyzed by both the on-site (ECCS) and the off-site confirmatory (Paradigm) laboratories demonstrated the consistent accuracy of the on-site laboratory. Comparison of results of the split samples analyzed by both laboratories showed excellent agreement across the full range of encountered Aroclor 1260 concentrations, including those near the PCB action level of 1.0 mg/Kg, confirming the suitability of the on-site measurements for site characterization and future decision-making.

- Both laboratories consistently met internal QA/QC criteria. Analytical systems were under control with regard to calibration, surrogate recoveries, matrix spikes, matrix spike duplicates, laboratory control samples, and blanks.
- 100% of split samples (*i.e.*, on-site vs. off-site laboratory) fell within the range of acceptable Relative Percent Differences (RPDs) for split soil samples.
- 100% of the duplicate sample pairs analyzed by the on-site laboratory fell within the acceptable range for RPDs for duplicate soil samples.
- 89% of the duplicate sample pairs analyzed by the off-site laboratory fell within the acceptable range for RPDs for duplicate soil samples.
- 100% of on-site laboratory results of <1.0 mg/Kg were confirmed by the off-site laboratory.
- The precision, accuracy, selectivity, and sensitivity of the on-site laboratory were excellent throughout the program.

Evaluation of On-Site Analytical PCB Determinations Puckett Street Properties October 2005

During the initial phase of the 2002 Drainage Channel Remediation program, comparability issues were revealed for some of the split samples. However, the comparability issues were resolved by modifying the off-site laboratory's sample preparation procedures, and the comparability demonstrated subsequently confirmed the strong performance of the on-site laboratory throughout the entire program.

2.0 ON-SITE LABORATORY METHOD PROCEDURES

MDEQ and USEPA Region IV approved the use of the on-site laboratory for assessment and confirmation of remediation on this project as discussed in Section 7.0 of this report. Both laboratories have consistently performed well during previous phases of assessment and remediation associated with the Kuhlman Electric project. In accordance with the approved QA/QC plan, ten percent of samples collected were split and sent to the off-site laboratory, Paradigm, to confirm the on-site laboratory results and applicability of these results to the assessment and remediation programs.

The on-site method used for the determination of PCBs during this program was an abbreviated, modified version of approved methods (a mini-extraction modifying EPA Method 3500B for sample extraction, EPA Method 3665A for extract cleanup, and EPA Method 8082 for determination of PCBs). Surrogates were added to each sample to monitor extraction performance; analysis was carried out on a gas chromatograph using capillary columns and an electron capture detector (ECD); and quantification was based on comparison to standards using daily 6-point calibration curves. Through the use of the gas chromatograph and ECD, the selectivity and sensitivity of the on-site method was equivalent to that of the off-site laboratory. The method was also similar to one previously demonstrated to be successful for PCBs by the EPA (USEPA, 1995).

2.1 On-Site Laboratory Sample Preparation and Extraction

For each sample, the on-site laboratory received a 9 oz. sample jar filled with soil that had been homogenized by the sample collectors. After processing the sample, as described below, on-site laboratory staff transferred soil from the original 9 oz. jar into a 4 oz. jar which was shipped to the off-site laboratory for confirmatory analysis. The on-site laboratory retained the balance of sample in the 9 oz. jar.

In the on-site laboratory, approximately 4 grams of each sample were weighed into a 20 mL scintillation vial. Approximately 10 grams of sodium sulfate were added to the vial and mixed with the soil until the mixture was free flowing. Surrogate solution containing decachlorobiphenyl [DCBP] and tetrachlorometaxylene [TCMX] was added, followed by addition of 8 mLs of solvent (80:20, isooctane:acetone). The container was then sealed and shaken for 3 thirty-second intervals. If the extract exhibited color following the shaking step, it was treated with sulfuric acid to remove interferants. Otherwise, the extract was decanted into injection vials and subsequently injected onto a gas chromatograph equipped with an electron capture detector.

2.2 On-Site Laboratory Analysis

Sample analysis was performed on an RTX-35, 30 m X 0.53mm ID X 0.5-micron film capillary column. Based on site history and prior analyses (and confirmed by this program), the PCBs were quantified as Aroclor 1260. Up to 9 Aroclor 1260 peaks were used to quantify the concentration of PCBs present, based on a 6-point calibration curve, which was generated each day. Continuing Calibration Verification (CCV) samples were also run regularly. Allowable surrogate recoveries were 60-140 % for both DCPB and TCMX (75-175% for acid treated samples). The nominal reporting limit was approximately 0.100 mg/Kg, well below the target action level of 1.0 mg/Kg.

2.3 On-Site Laboratory QA/QC

The QA/QC parameters of the on-site methodology are described in the on-site laboratory reports (Appendix 1). The on-site laboratory consistently met its QA/QC criteria, ensuring that the analytical system was under control with regard to calibrations, matrix spikes, matrix spike duplicates, laboratory control samples, and blanks. Sample surrogate recoveries were calculated on a real-time basis and re-extractions and re-analyses were performed on the infrequent occasions that allowable recoveries were not achieved.

3.0 OFF-SITE LABORATORY METHOD PROCEDURES

The confirmatory off-site laboratory, Paradigm, used approved EPA standard analytical methods, including EPA Method 3545 for extraction, EPA Method 3665A for cleanup of the extract, and EPA Method 8082 for analysis of the extract for PCBs.

3.1 Off-Site Laboratory Sample Preparation and Extraction

EPA Method 3545, Accelerated Solvent Extraction (or Pressurized Solvent Extraction), was used to extract PCBs from the split samples sent to the off-site laboratory. Approximately 10 grams of soil were mixed and dried with approximately 20 grams of drying agent (sodium sulfate), then extracted in a pressurized, heated extraction device. Two extraction cycles were used.

3.2 Off-Site Laboratory Analysis

The off-site laboratory used EPA Method 8082 for the analysis of samples (USEPA, 1997). The method was virtually the same as that of the on-site laboratory with regard to equipment and methodology.

3.3 Off-Site Laboratory QA/QC

The off-site laboratory consistently met its QA/QC criteria, ensuring that the analytical system was under control with regard to calibrations, surrogate recoveries, matrix spikes, matrix spike duplicates, laboratory control samples, and blanks (See Appendix 1).

4.0 COMPARISON OF ON-SITE LABORATORY AND OFF-SITE LABORATORY RESULTS

4.1 Split Samples

The PCB (Aroclor 1260) data for all split samples are presented in Table 1. Other information regarding these samples is, such as collection dates, depth of sample, *etc.*, is included in the Assessment Report and in Appendix 1.

Throughout this document we use the on-site laboratory results directly (expressed on an as received, or wet weight basis) to compare with the off-site laboratory results. This comparison is most appropriate for evaluating the performance of the on-site laboratory because it coincides exactly with how the on-site laboratory results were used on a real-time basis for decision making in the field and in generating a conceptual site model. For all calculations and plotting, "non-detects" were set to values equal to the reporting limit.

A comparison of all on-site and off-site laboratory results for July 14 – September 6, 2005 is illustrated in Figure 1. The regression line, its equation, and the coefficient of determination (R², [Zar, 1984]) are also presented in the figure (and is presented in all similar figures in this report). The on-site laboratory results correlated strongly with the off-site laboratory results.

To evaluate precision and accuracy further, the Relative Percent Difference (RPD; RPD =([on-site-off-site]/{[on-site + off-site]/2} X 100%)) was calculated for each pair of split samples (see Table 1). For this data analysis, we evaluated the split sample data against an RPD criterion of 100%. This criterion was used by EPA Region IV at the Anniston, Alabama site (CHMM, 2000; USEPA Region IV, 2000).

Unfortunately, USEPA Region IV's data validation guidance does not specify a criterion for split sample precision, other than to note whether precision was acceptable, provisional, or unacceptable; based on our analysis the precision is acceptable (USEPA Region IV, 1999). For the purposes of our evaluation, "non-detects" were set to detected values equal to the reporting limit.

Figure 2 plots the RPD *versus* the off-site laboratory concentration (Paradigm). Typically, the magnitude of the RPDs is greater and more variable as concentrations approach the detection limit because a given absolute difference in concentration constitutes a larger percentage difference. In this data set, however, the RPDs indicate exceptionally good correlation between laboratories even at very low concentrations. Figure 3 presents the median RPD along with percentile information, for split samples within the concentration ranges ≤10 mg/Kg. No data evaluations were performed on concentrations between 10 and 100 mg/Kg or > 100 mg/Kg because there were no results detected in these concentration ranges.

Soil contamination is prone to heterogeneity for semivolatile organics like PCBs because PCBs adhere to soil particles and do not generally get mixed well in the environment. This trait of soil contamination is recognized by regulatory agencies and is reflected in the larger RPD tolerances for soil samples relative to aqueous samples (USEPA Region I, 1996). However, the precision and accuracy of the Puckett Street on-site data as reflected in the RPD determinations were excellent (see Table 1). There were no instances where the RPDs of split samples exceeded 100%.

4.2 Duplicate Samples

Table 2 presents the data for each duplicate sample pair analyzed by both the on-site laboratory and the off-site laboratory. On-site and off-site duplicate pair results were evaluated for precision using criteria presented for non-aqueous matrices in USEPA's Region I data validation guidelines (USEPA Region I, 1996).

Region I's precision criterion is RPD \leq 50% for non-aqueous duplicate results that are greater than 2 times the quantitation limit. For results less than 2 times the quantitation limit, if the difference between the results was less than the quantitation limit, the results were deemed to have demonstrated acceptable precision. This allows for evaluation of the results, taking into consideration the increased variability of data near the sample quantitation limit

(USEPA Region I, 1996). For the on-site laboratory 9 out of 9 duplicate pair analyses (100%) met RPD criteria. For the off-site laboratory, 8 out of 9 pairs (89%) met RPD criteria.

A comparison of each sample and its duplicate (July 14 – September 6, 2005) is presented in Figure 4 (on-site laboratory) and Figure 5 (off-site laboratory). Note that generally, the precision achieved by the on-site laboratory was marginally better to that of the off-site laboratory (as seen by a slightly higher R² and smaller y-intercept), although both laboratories performed well in this regard.

Figure 6 presents the RPD of the field duplicate analyses *versus* the average concentration for the pair (July 14 – September 6, 2005).

Again, the magnitude of the RPD typically increases at low concentrations, but in this data set, the on-site laboratory exhibits exceptional reproducibility of results indicating consistent

adherence to analytical methods and quality control procedures. Figure 7 presents the equivalent information for the off-site laboratory.

In the majority of the figures described above, RPDs were allowed to be either positive or negative in order to evaluate data trends (*e.g.*, if either the bonafide sample or its duplicate were consistently higher or lower). The RPDs were positive when the field sample result was greater than the duplicate result and negative when the field sample result was less than the duplicate result. For Figure 8, however, we present the mean of the absolute value of the RPDs (*e.g.*, an RPD of –18% becomes 18%) for the duplicate analyses for both the on-site laboratory and the off-site laboratory. Figure 8 demonstrates that the precision of the on-site laboratory compares favorably with that of the off-site laboratory (RPDs were 2.3% *versus* 16.8%, respectively).

4.3 Action Level Decisions

An important aspect of on-site chemistry programs relates to the reliability of real-time decisions based on on-site laboratory results. The performance of the on-site chemistry program with respect to the action level of 1.0 mg/Kg was excellent in this regard. Tables 3 and 4 summarize our findings. The off-site laboratory confirmed the on-site finding of < 1.0 mg/Kg 13 times out of 13,

and confirmed findings of ≥ 1 mg/Kg 2 out of 3 times. Sample CSP-DP-171-001 had an on-site laboratory result of 1.2 mg/Kg, while the off-site laboratory result was 0.988 mg/Kg (Table 1). The relative percent difference between the results is 19.4%, well within the accepted criterion for split sample precision.

4.4 Summary

Overall, the agreement between the results of the on-site laboratory and the off-site laboratory was excellent. This conclusion is based on the high correlations achieved in the regressions of on-site results *versus* off-site laboratory results; the accuracy in determining PCBs near the action level of 1.0 mg/Kg; the high precision attained by the on-site laboratory; and the virtual absence of significant QA/QC issues in the on-site laboratory throughout the program.

5.0 REFERENCES

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