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June 1, 2007

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

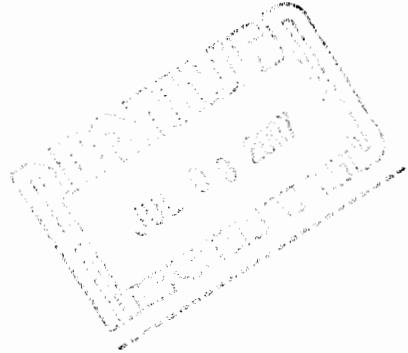
Dear Mr. Martin,

Enclosed is the Technical Memorandum for VOC work recently performed at the Kuhlman Electric Corporation (KEC) facility in Crystal Springs, MS. If you have any questions concerning this information, give me a call.

Sincerely,

*Kari Ann Filbin*  
Joseph Kubale

Enclosure



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Environmental Chemistry Consulting Services, Inc.

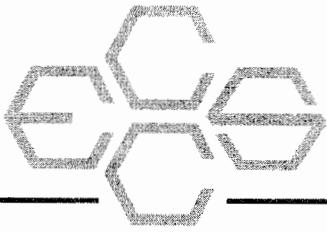
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**Technical Memorandum**

**Kuhlman Electric Corporation (KEC)**

**Crystal Springs, Mississippi**



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## TECHNICAL MEMORANDUM

June 1, 2007

To: Robert Martin  
Martin and Slagle

From: Joseph Kubale *Kub*  
ECCS

Re: Field Analytical Methods  
1,4-Dioxane  
Kuhlman Electric Corporation (KEC)  
Crystal Springs, MS

### **Introduction**

This Technical Memorandum provides documentation of the field analytical test methods used to analyze well water samples collected November 8, 2006 near the Kuhlman Electric Corporation (KEC) facility in Crystal Springs, MS. The samples were analyzed direct injection GC/MSD/SIM for the 1,4-Dioxane.

### **Narrative**

#### **Waters**

Water samples were extracted then analyzed for 1,4-Dioxane by direct injection GC/MSD/SIM.

The report limit for 1,4-Dioxane is 1.0 $\mu$ g/L for water samples.

A summary of test results is provided in Table 1. A summary of method blanks and matrix spike/matrix spike duplicate data is provided in Table 2.

In addition copies of the chain of custody sheets can be found in appendix A.

## **1,4-Dioxane Method Summary**

### **Water Samples**

Water samples were provided by the client to the field lab in 40mL VOC vials. Two 40mL VOC vials were transferred to the filtering apparatus, spiked with 40 $\mu$ L 25 $\mu$ g/mL surrogate solution and 40 $\mu$ L 25 $\mu$ g/mL spike solution (if necessary) then filtered through a 3M 2272 activated carbon disk. The activated carbon disk was placed in a 3 dram vial containing 8mL acetone and sonicated for 15 minutes. An 0.8mL aliquot of the sample extract was spiked with 10 $\mu$ L 25 $\mu$ g/mL internal standard solution and analyzed by direct inject GC/MSD/SIM.

### **GC/MSD Procedure:**

Identification of the target compound was done by matching retention times, quantitation and qualifier ion relative responses to that of an authentic standard. Quantitation is accomplished by comparing the response of the major (quantitation) ion relative to an internal standard using a seven point calibration curve. These levels equate to 0.5, 1.0, 2.5, 5.0, 10, 50 and 100  $\mu$ g/L for water samples.

A Hewlett-Packard 5890 Series II gas chromatograph with a 30m x 0.32mm 1.8 $\mu$  film, RTX-624 micro-capillary column interfaced to a Hewlett-Packard 5972 MSD was used. The data system included a Hewlett-Packard Enviroquant chromatography workstation for data handling.

Quality control consisted of the following items:

- Initial calibration with % relative standard deviation less than 15% of individual response factors obtained from analysis of calibration standards
- Continuing Calibration Verification standards analyzed at a frequency of every ten samples
- Surrogate standard additions to samples
- Blank samples analyzed at a minimum of one per day
- Matrix spike and Matrix Spike Duplicate samples analyzed for every twenty samples
- Information documented in Field Logbook 150.

**Table 1**

**Sample Results – November'06**

TABLE 1

		Kuhlman Electric - Crystal Springs,				Mississippi - Volatiles Detected in Water					
		W1737	W1738	W1739		W1740	W1741	W1742	W1743	W1744	W1745
		CSW	CSW	CSW		CSW	CSW	CSW	CSW	CSW	CSW
		WA8	WA3	FB		WA1	WA2	WA5	WA6	TP	Dup
		005	005	005		005	005	001	001	005	
Depth		-	-	-		-	-	-	-	-	
Date Collected	8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06		8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06
Time Collected	8:30	8:45	9:10	9:15		9:30	9:45	10:00	10:20	-	-
Date Analyzed	8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06		8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06	8-Nov-06
Reporting Limit ug/L											
<b>VOLATILES</b>											
1,4-Dioxane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Surrogates:											
1,4-Dioxane-D8	%	84.8	85.5	85.7	86.3	84.8	87.9	88.6	87.2	84.7	

**Table 2**

**QC Results – November'06**

TABLE 2  
QC Report

Lab # associated with qc samples: W1737 through W1745

Matrix	Matrix	Matrix	Blank	LCS
Spike	Duplicate			
W1745	W1745			

Date Analyzed: 11/9/06 11/9/06 11/9/06 11/9/06

Compound	% Rec		% Rec		% RPD	ug/L	% Rec
1,4-Dioxane	90.7%		89.0%		2%	< 5.0	83.2%

**Appendix A**

**Chain of Custody Sheets for Samples**

