Nationwide Mobile Laboratories
Pesticide Residue Laboratory
Chemistry Consulting

December 11, 2008

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 Killian for Joseph Kubale

Enclosure

Environmental Chemistry Consulting Services, Inc.

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Technical Memorandum

Kuhlman Electric Corporation (KEC)

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

December 11, 2008

To: Robert Martin
Martin and Slagle

From: Joseph Kubale
ECCS

Re: Analytical Methods
Volatile Organic Compounds (VOC) , 1,4-Dioxane
Kuhlman Electric Corporation (KEC)
Crystal Springs, MS

Introduction

This Technical Memorandum provides documentation of the analytical test methods used to analyze water samples collected in November 2008 during the city well groundwater sampling event near the Kuhlman Electric Corporation (KEC) facility in Crystal Springs, MS. The samples were analyzed by purge and trap GC/MSD for the VOCs listed below and by direct injection GC/MSD/SIM for 1,4-Dioxane.

Narrative

Waters
Water samples were analyzed for VOCs directly by purge and trap GC/MSD and for 1,4-Dioxane by direct injection GC/MSD/SIM.

The following report limits were used for water samples. The reporting limit units are in ug/L.

	Purge and Trap GC/MSD
Dichlorodifluoromethane	1.0
Chloromethane	1.0
Vinyl chloride	1.0
Bromomethane	1.0
Chloroethane	1.0
Trichlorofluoromethane	1.0

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Purge and Trap GC/MSD

1,1-Dichloroethene	1.0
Methylene chloride	1.0
trans-1,2-Dichloroethene	1.0
1,1-Dichloroethane	1.0
cis-1,2-Dichloroethene	1.0
2,2-Dichloropropane	1.0
Bromochloromethane	1.0
Chloroform	1.0
1,1,1-Trichloroethane	1.0
1,1-Dichloropropene	1.0
Carbon tetrachloride	1.0
Benzene	1.0
1,2-Dichloroethane	1.0
Trichloroethene	1.0
1,2-Dichloropropane	1.0
Dibromomethane	1.0
Bromodichloromethane	1.0
cis-1,3-Dichloropropene	1.0
Toluene	1.0
trans-1,3-Dichloropropene	1.0
1,1,2-Trichloroethane	1.0
Tetrachloroethene	1.0
1,3-Dichloropropane	2.0
Dibromochloromethane	1.0
1,2-Dibromoethane	1.0
Chlorobenzene	1.0
1,1,1,2-Tetrachloroethane	1.0
Ethyl benzene	1.0
Xylenes, total	2.0
Styrene	1.0
Bromoform	2.0
Isopropylbenzene	1.0
1,1,2,2-Tetrachloroethane	2.0
Bromobenzene	1.0
1,2,3-Trichloropropane	2.0
n-Propylbenzene	1.0
2-Chlorotoluene	1.0
1,3,5-Trimethylbenzene	1.0
4-Chlorotoluene	1.0
tert-Butylbenzene	1.0
1,2,4-Trimethylbenzene	1.0
sec-Butylbenzene	1.0
1,3-Dichlorobenzene	1.0
p-Isopropyltoluene	1.0
1,4-Dichlorobenzene	1.0
n-Butylbenzene	1.0
1,2-Dichlorobenzene	1.0
1,2-Dibromo-3-chloropropane	2.0
1,3,5-Trichlorobenzene	1.0
1,2,4-Trichlorobenzene	1.0
Hexachlorobutadiene	1.0

	Purge and Trap GC/MSD
Naphthalene	3.0
1,2,3-Trichlorobenzene	1.0
	Direct Injection GC/MSD/SIM
1,4-Dioxane	1.0

A summary of volatile test results is provided in Table 1. A summary of 1,4-Dioxane results is provided in table 2. A summary of method blanks and matrix spike/matrix spike duplicate data is provided in Table 3 and 4, respectively.

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 samples
B) FEDEX shipping label for Columbia Analytical Services, Inc.
C) Chain of custody sheets for samples sent to Columbia Analytical Services, Inc.

VOC Method Summary

Water Samples

Water samples were provided by the client to the lab in 40mL VOC vials. A 10mL aliquot of the sample was withdrawn from the vial with a 10mL Luer-Lok ™ syringe. 10 µL of a 25µg/mL surrogate and internal standard solution was added to the sample in the 10 mL syringe. The sample was then immediately loaded onto a Tekmar ALS 2016 autosampler with a Tekmar LSC 2000 purge and trap concentrator for GC\MSD analysis.

GC/MSD Procedure:

Identification of target compounds was done by matching retention times and mass spectra of peaks found in samples to those found in a VOC calibration standard using the internal standards as time reference peaks. Quantitation was performed by the internal standard technique using a seven point standard curve generated from 5, 10, 20, 50, 100, 250, and 500 ng standards. These levels equate to 0.5, 1.0, 2.0, 5.0, 10, 25 and 50 µg/L for water samples.

A Hewlett-Packard 5890 gas chromatograph with a 30m x 0.32mm 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 or less
- Surrogate standard additions to samples
- Blank and LCS samples analyzed every twenty samples or less with a minimum of one per day per matrix.
- MS/MSD samples analyzed every twenty samples or less per matrix.
- Information documented in Logbook 150.

1,4-Dioxane Method Summary

Water Samples

Water samples were provided by the client to the lab in 1L amber bottle. 200 grams of sample was transferred to the filtering apparatus, spiked with 40uL 25ug/mL surrogate solution and 40uL 25ug/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 methanol and sonicated for 15 minutes. A 0.8mL aliquot of the sample extract was spiked with 10uL 25ug/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, quantitaion 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 in internal standard using a seven point calibration curve. These levels equate to 0.5, 1.0, 2.5, 5.0, 10, 50 and 100 ug/L for water samples.

A Hewlett-Packard 5890 Series II gas chromatograph with a 30m x 0.32mm 1.8u 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 or less
- Surrogate standard additions to samples
- Blank and LCS samples analyzed every twenty samples or less with a minimum of one per day per matrix.
- MS/MSD samples analyzed every twenty samples or less per matrix.
- Information documented in Logbook 196.

Table 1

Sample Results Volatiles– November

TABLE 1

Kuhlman Electric - Crystal Springs, Mississippi - Volatiles Detected in Water

VOLATILES	Reporting Limit ug/L	W2466 CSW WA8 030 - 12-Nov-08 8:15 12-Nov-08	W2467 CSW WA3 030 - 12-Nov-08 8:20 12-Nov-08	W2468 CSW WA1 030 - 12-Nov-08 8:30 12-Nov-08	W2469 CSW WA2 030 - 12-Nov-08 8:41 12-Nov-08	W2470 CSW FB 030 - 12-Nov-08 8:45 12-Nov-08	W2471 CSW WA5 025 - 12-Nov-08 9:05 12-Nov-08	W2472 CSW WA6 025 - 12-Nov-08 9:25 12-Nov-08	W2473 CSW TP 030 - 12-Nov-08 9:35 12-Nov-08	W2474 CSW Duplicate - 12-Nov-08 - 12-Nov-08
Dichlorodifluoromethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Toluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**	< 1.0
1,2-Dibromoethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethyl Benzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

TABLE 1

Kuhlman Electric - Crystal Springs, Mississippi - Volatiles Detected in Water

VOLATILES	Reporting Limit ug/L	W2466 CSW WA8 030 - 12-Nov-08 8:15 12-Nov-08	W2467 CSW WA3 030 - 12-Nov-08 8:20 12-Nov-08	W2468 CSW WA1 030 - 12-Nov-08 8:30 12-Nov-08	W2469 CSW WA2 030 - 12-Nov-08 8:41 12-Nov-08	W2470 CSW FB 030 - 12-Nov-08 8:45 12-Nov-08	W2471 CSW WA5 025 - 12-Nov-08 9:05 12-Nov-08	W2472 CSW WA6 025 - 12-Nov-08 9:25 12-Nov-08	W2473 CSW TP 030 - 12-Nov-08 9:35 12-Nov-08	W2474 CSW Duplicate - 12-Nov-08 - 12-Nov-08
Xylenes, Total	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Isopropylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Bromobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
n-Propylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Butylbenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3,5-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,3-Trichlorobenzene	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Surrogates:										
Dibromofluoromethane	%	109	105	105	107	103	102	97.7	105	103
Toluene-D8	%	95.4	96.7	97.4	95.3	98.3	103	114	104	99.0
4-Bromofluorobenzene	%	92.2	93.4	92.4	93.9	92.0	93.9	96.8	94.3	91.4

Table 2

Sample Results 1,4-Dioxane– November

TABLE 2

Kuhlman Electric - Crystal Springs, Mississippi - 1,4-Dioxane Detected in Water

		W2466	W2467	W2468	W2469	W2470	W2471	W2472	W2473	W2474
		CSW	CSW	CSW	CSW	CSW	CSW	CSW	CSW	CSW
		WA8	WA3	WA1	WA2	FB	WA5	WA6	TP	Duplicate
		030	030	030	030	030	025	025	030	
	Depth	-	-	-	-	-	-	-	-	
	Date Collected	12-Nov-08	12-Nov-08	12-Nov-08	12-Nov-08	12-Nov-08	12-Nov-08	12-Nov-08	12-Nov-08	12-Nov-08
	Time Collected	8:15	8:20	8:30	8:41	8:45	9:05	9:25	9:35	-
	Date Analyzed	13-Nov-08	13-Nov-08	13-Nov-08	13-Nov-08	13-Nov-08	13-Nov-08	13-Nov-08	13-Nov-08	13-Nov-08
VOLATILES	Reporting Limit ug/L									
1,4-Dioxane	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	%	83.1	94.3	88.8	91.9	95.3	94.7	88.5	89.9	94.8

Table 3

QC Results Volatiles– November

TABLE 3
QC Report

Lab # associated with qc samples: W2466 through W2474

	Matrix Spike W2466		Matrix Spike Duplicate W2466			Blank
Date Analyzed:	11/12/08		11/12/08			11/12/08

Compound	% Rec		% Rec	RPD		ug/L
Dichlorodifluoromethane	89.8%		88.4%	1.6%		< 1.0
Chloromethane	92.4%		87.8%	5.1%		< 1.0
Vinyl chloride	95.0%		94.2%	0.8%		< 1.0
Bromomethane	95.6%		104%	8.4%		< 1.0
Chloroethane	103%		94.2%	9.1%		< 1.0
Trichlorofluoromethane	101%		97.0%	4.0%		< 1.0
1,1-Dichloroethene	95.2%		101%	5.7%		< 1.0
Methylene chloride	97.8%		97.4%	0.4%		< 1.0
trans-1,2-Dichloroethene	100%		104%	3.3%		< 1.0
1,1-Dichloroethane	106%		103%	2.5%		< 1.0
cis-1,2-Dichloroethene	99.0%		99.0%	0.0%		< 1.0
2,2-Dichloropropane	97.8%		97.8%	0.0%		< 1.0
Bromochloromethane	102%		103%	0.8%		< 1.0
Chloroform	100%		99.0%	1.4%		< 1.0
1,1,1-Trichloroethane	104%		101%	2.9%		< 1.0
1,1-Dichloropropene	95.6%		97.2%	1.7%		< 1.0
Carbon tetrachloride	102%		100%	2.2%		< 1.0
Benzene	102%		102%	0.2%		< 1.0
1,2-Dichloroethane	97.4%		99.4%	2.0%		< 1.0
Trichloroethene	97.6%		97.6%	0.0%		< 1.0
1,2-Dichloropropane	96.0%		102%	5.7%		< 1.0
Dibromomethane	98.0%		98.4%	0.4%		< 1.0
Bromodichloromethane	89.6%		90.6%	1.1%		< 1.0
cis-1,3-Dichloropropene	88.6%		89.0%	0.5%		< 2.0
Toluene	96.0%		97.6%	1.7%		< 1.0
trans-1,3-Dichloropropene	86.6%		89.6%	3.4%		< 1.0
1,1,2-Trichloroethane	98.8%		98.2%	0.6%		< 1.0
Tetrachloroethene	95.8%		96.6%	0.8%		< 1.0
1,3-Dichloropropane	93.0%		92.6%	0.4%		< 1.0
Dibromochloromethane	88.4%		87.2%	1.4%		< 1.0
1,2-Dibromoethane	91.2%		90.8%	0.4%		< 1.0
Chlorobenzene	101%		100%	0.8%		< 1.0
1,1,1,2-Tetrachloroethane	105%		105%	0.4%		< 1.0
Ethyl benzene	98.8%		99.4%	0.6%		< 1.0
Xylenes, Total	98.8%		100%	1.4%		< 2.0
Styrene	98.4%		99.6%	1.2%		< 1.0
Bromoform	96.2%		97.2%	1.0%		< 2.0

TABLE 3
QC Report

Lab # associated with qc samples: W2466 through W2474

	Matrix Spike W2466	Matrix Spike Duplicate W2466	Blank
Date Analyzed:	11/12/08	11/12/08	11/12/08

Compound	% Rec		% Rec	RPD		ug/L
Isopropylbenzene	91.8%		91.6%	0.2%		< 1.0
1,1,2,2-Tetrachloroethane	100%		101.6%	1.6%		< 2.0
Bromobenzene	98.4%		98.6%	0.2%		< 1.0
1,2,3-Trichloropropane	97.6%		102%	4.8%		< 2.0
n-Propylbenzene	97.2%		96.8%	0.4%		< 1.0
2-Chlorotoluene	95.8%		96.8%	1.0%		< 1.0
1,3,5-Trimethylbenzene	96.6%		97.0%	0.4%		< 1.0
4-Chlorotoluene	97.8%		98.4%	0.6%		< 1.0
tert-Butylbenzene	90.8%		91.2%	0.4%		< 1.0
1,2,4-Trimethylbenzene	95.4%		97.0%	1.7%		< 1.0
sec-Butylbenzene	94.0%		94.6%	0.6%		< 1.0
1,3-Dichlorobenzene	104%		105%	1.0%		< 1.0
p-Isopropyltoluene	98.8%		102%	3.2%		< 1.0
1,4-Dichlorobenzene	102%		102%	0.8%		< 1.0
n-Butylbenzene	103%		107%	3.2%		< 1.0
1,2-Dichlorobenzene	101%		103%	1.6%		< 1.0
1,2-Dibromo-3-chloropropane	98.8%		105%	5.9%		< 2.0
1,3,5-Trichlorobenzene	93.4%		98.6%	5.4%		< 1.0
1,2,4-Trichlorobenzene	92.4%		101%	9.1%		< 1.0
Hexachlorobutadiene	97.4%		96.2%	1.2%		< 1.0
Naphthalene	87.2%		91.6%	4.9%		< 3.0
1,2,3-Trichlorobenzene	97.0%		99.2%	2.2%		< 1.0

Table 4

QC Results 1,4-Dioxane– November

TABLE 4
QC Report

Lab # associated with qc samples: W2466 through W2474

	Matrix Spike	Matrix Spike Duplicate		LCS	Blank
	W2466	W2466			
Date Extracted:	11/12/08	11/12/08		11/12/08	11/12/08
Date Analyzed:	11/13/08	11/13/08		11/13/08	11/13/08

Compound	% Rec		% Rec	RPD		% Rec	ug/L
1,4-Dioxane	94.7%		93.5%	1.3%		93.8%	< 1.0

Appendix A

Chain of Custody Sheets for Samples

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

City Wells

No. 013774

Page 1 of 1

Turn Around (circle one) Normal Rush
Report Due:

Project Number:
Project Name: KUHLMAN ELECTRIC
Project Location: CRYSTAL SPRINGS
Sampled By (Print): Chuck Paul

Mail Report To:
Company: MARTIN & SLAGLE
Address:

Invoice To:
Company:
Address:

P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
CSW-WA8-030	11/12/08	0815	W	4	A	1,4 Dioxane & 8260B		W2466
CSW-WA3-030		0820		4	A			W2467
CSW-WA1-030		0830		17	A/B			W2468
CSW-WA2-030		0841		4	A			W2469
CSW-FB-030		0845		4	A			W2470
CSW-WA5-025		0905		4	A			W2471
CSW-WA6-025		0925		4	A			W2472
CSW-TP-030		0935		7	A/B			W2473
CSW-DUPLICATE		—		8	A/B			W2474

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Charles D. M. Paul — Date/Time: 11/12/08 1000 — Received By: [signature] — Date/Time: 11/12/08 1000

Relinquished By: — Date/Time: — Received By: — Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:
Temp Blank Y N Ice

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

Appendix B

FEDEX shipping label for Columbia Analytical Services, Inc.

FedEx Express **USA Airbill** FedEx Tracking Number **837784146392**

Form ID No. **0200** Sender's Copy

From *Please print and press hard.*

Date 11/13/08 Sender's FedEx Account Number 2262 8199 1

Sender's Name JOE KUBALE Phone (608) 345-1974

Company ECCS INC

Address 2525 ADVANCE RD

Dept./Floor/Suite/Room

City MADISON State WI ZIP 53718

Your Internal Billing Reference
First 24 characters will appear on invoice.

To

Recipient's Name SAMPLE CUSTODIAN Phone (360) 577-7222

Company COLUMBIA ANALYTICAL

Address

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address 1317 South 13th AVE

Dept./Floor/Suite/Room

City KELSO State WA ZIP 98626

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [ ] **SATURDAY Delivery** — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] **HOLD Weekday** at FedEx Location — NOT Available for FedEx First Overnight
- [ ] **HOLD Saturday** at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. 2262 8199 1 Exp. Date

Total Packages	Total Weight	Total Declared Value†
		$ .00

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

FedEx Use Only

8 Release Signature *Sign to authorize delivery without obtaining signature.*

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

446

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Appendix C

Chain of Custody Sheets for samples sent to Columbia Analytical Services, Inc.

CHAIN OF CUSTODY

Columbia Analytical Services™
1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#:_____ PAGE 1 OF 1 COC #_____

PROJECT NAME: KUHLMAN ELECTRIC
PROJECT NUMBER:
PROJECT MANAGER: ROBERT MARTIN
COMPANY/ADDRESS: MARTIN + SAGLE
CITY/STATE/ZIP: BOISE MOUNTAIN NC
E-MAIL ADDRESS:
PHONE #: FAX #:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☒	Hydrocarbons Gas ☐ 8021 ☐ BTEX ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIO) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐ Hex-Chrom ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	1,4 Dioxane by 8270 SIM				REMARKS
CSW-WA1-030	11/12/08	0830		W	13		X													X				MS/MSD w/ this
CSW-DUPLICATE	11/12/08	—		W	5		X													X				
TRIP BLANK	—	—		W	2																			

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
_X_ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: BURG WARNER

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
_X_ Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

8260B - Kuhlman list

1,4 Dioxane - met 0.5 ug/L Report limit

Extra sample volume for MS/MSD at CSW-WA1-030

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm