Nationwide Mobile Laboratories
Pesticide Residue Laboratory
Chemistry Consulting

October 28, 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

October 28, 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 October 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– October

TABLE 1

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

VOLATILES	Reporting Limit ug/L	W2455 CSW WA8 ✓ 029	W2456 CSW WA3 ✓ 029	W2457 CSW WA1 ✓ 029	W2458 CSW WA2 ✓ 029	W2459 CSW FB 029	W2460 CSW WA5 ✓ 024	W2461 CSW WA6 ✓ 024	W2462 CSW TP ✓ 029	W2463 CSW Duplicate
Depth		-	-	-	-	-	-	-	-	
Date Collected		14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08
Time Collected		8:10	8:26	8:36	8:47	8:51	9:21	9:34	9:53	-
Date Analyzed		14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-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	**1.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**
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	**1.2**	< 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

		W2455	W2456	W2457	W2458	W2459	W2460	W2461	W2462	W2463
		CSW	CSW	CSW	CSW	CSW	CSW	CSW	CSW	CSW
		WA8	WA3	WA1	WA2	FB	WA5	WA6	TP	Duplicate
		029	029	029	029	029	024	024	029	
	Depth	-	-	-	-	-	-	-	-	
	Date Collected	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08
	Time Collected	8:10	8:26	8:36	8:47	8:51	9:21	9:34	9:53	-
	Date Analyzed	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08
	Reporting Limit									
VOLATILES	ug/L									
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	%	104	105	106	100	99.9	106	105	105	104
Toluene-D8	%	101	103	102	112	100	102	101	101	99.8
4-Bromofluorobenzene	%	93.3	93.9	93.0	91.8	94.0	92.5	92.6	88.0	93.7

Table 2

Sample Results 1,4-Dioxane– October

TABLE 2

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

		W2455	W2456	W2457	W2458	W2459	W2460	W2461	W2462	W2463
		CSW	CSW	CSW	CSW	CSW	CSW	CSW	CSW	CSW
		WA8	WA3	WA1	WA2	FB	WA5	WA6	TP	Duplicate
		029	029	029	029	029	024	024	029	
	Depth	-	-	-	-	-	-	-	-	
	Date Collected	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08	14-Oct-08
	Time Collected	8:10	8:26	8:36	8:47	8:51	9:21	9:34	9:53	-
	Date Analyzed	15-Oct-08	15-Oct-08	15-Oct-08	15-Oct-08	15-Oct-08	15-Oct-08	15-Oct-08	15-Oct-08	15-Oct-08
VOLATILES	Reporting Limit ug/L									
1,4-Dioxane	1.0	< 1.0	< 1.0	**1.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**
Surrogates:										
1,4-Dioxane-D8	%	94.5	90.7	99.2	95.0	89.2	100	88.7	88.6	95.0

Table 3

QC Results Volatiles– October

TABLE 3
QC Report

Lab # associated with qc samples: W2455 through W2463

	Matrix Spike W2455	Matrix Spike Duplicate W2455	Blank
Date Analyzed:	10/14/08	10/15/08	10/14/08

Compound	% Rec		% Rec	RPD		ug/L
Dichlorodifluoromethane	103%		99.8%	2.8%		< 1.0
Chloromethane	116%		111%	4.6%		< 1.0
Vinyl chloride	108%		102%	5.3%		< 1.0
Bromomethane	101%		96.8%	4.0%		< 1.0
Chloroethane	112%		109%	3.4%		< 1.0
Trichlorofluoromethane	113%		108%	4.0%		< 1.0
1,1-Dichloroethene	107%		106%	1.1%		< 1.0
Methylene chloride	101%		101%	0.4%		< 1.0
trans-1,2-Dichloroethene	109%		107%	1.7%		< 1.0
1,1-Dichloroethane	106%		104%	1.9%		< 1.0
cis-1,2-Dichloroethene	103%		103%	0.8%		< 1.0
2,2-Dichloropropane	103%		98.8%	3.8%		< 1.0
Bromochloromethane	102%		104%	1.4%		< 1.0
Chloroform	93.4%		92.2%	1.3%		< 1.0
1,1,1-Trichloroethane	104%		103%	1.2%		< 1.0
1,1-Dichloropropene	98.4%		101%	2.6%		< 1.0
Carbon tetrachloride	106%		104%	1.9%		< 1.0
Benzene	104%		99.0%	4.9%		< 1.0
1,2-Dichloroethane	105%		104%	0.4%		< 1.0
Trichloroethene	103%		98.4%	4.8%		< 1.0
1,2-Dichloropropane	105%		98.6%	6.5%		< 1.0
Dibromomethane	101%		101%	0.4%		< 1.0
Bromodichloromethane	86.6%		85.8%	0.9%		< 1.0
cis-1,3-Dichloropropene	89.6%		91.6%	2.2%		< 2.0
Toluene	102%		99.6%	2.2%		< 1.0
trans-1,3-Dichloropropene	93.2%		93.6%	0.4%		< 1.0
1,1,2-Trichloroethane	99.2%		97.4%	1.8%		< 1.0
Tetrachloroethene	98.2%		97.6%	0.6%		< 1.0
1,3-Dichloropropane	96.8%		95.6%	1.2%		< 1.0
Dibromochloromethane	88.2%		89.4%	1.4%		< 1.0
1,2-Dibromoethane	93.8%		95.2%	1.5%		< 1.0
Chlorobenzene	103%		99.6%	3.6%		< 1.0
1,1,1,2-Tetrachloroethane	101%		102%	0.8%		< 1.0
Ethyl benzene	101%		101%	0.0%		< 1.0
Xylenes, Total	102%		102%	0.0%		< 2.0
Styrene	103%		102%	1.0%		< 1.0
Bromoform	90.4%		92.6%	2.4%		< 2.0

TABLE 3
QC Report

Lab # associated with qc samples: W2455 through W2463

	Matrix Spike W2455	Matrix Spike Duplicate W2455	Blank
Date Analyzed:	10/14/08	10/15/08	10/14/08

Compound	% Rec		% Rec	RPD		ug/L
Isopropylbenzene	99.2%		98.2%	1.0%		< 1.0
1,1,2,2-Tetrachloroethane	95.2%		96.2%	1.0%		< 2.0
Bromobenzene	99.0%		97.8%	1.2%		< 1.0
1,2,3-Trichloropropane	101%		102%	1.0%		< 2.0
n-Propylbenzene	103%		102%	1.6%		< 1.0
2-Chlorotoluene	103%		102%	1.2%		< 1.0
1,3,5-Trimethylbenzene	102%		101%	0.6%		< 1.0
4-Chlorotoluene	102%		102%	0.4%		< 1.0
tert-Butylbenzene	101%		98.0%	3.4%		< 1.0
1,2,4-Trimethylbenzene	103%		99.6%	3.0%		< 1.0
sec-Butylbenzene	101%		101%	0.2%		< 1.0
1,3-Dichlorobenzene	103%		105%	2.3%		< 1.0
p-Isopropyltoluene	99.2%		100%	1.2%		< 1.0
1,4-Dichlorobenzene	101%		102%	0.6%		< 1.0
n-Butylbenzene	102%		102%	0.4%		< 1.0
1,2-Dichlorobenzene	98.6%		100%	1.8%		< 1.0
1,2-Dibromo-3-chloropropane	89.2%		94.2%	5.5%		< 2.0
1,3,5-Trichlorobenzene	93.6%		96.2%	2.7%		< 1.0
1,2,4-Trichlorobenzene	89.6%		93.4%	4.2%		< 1.0
Hexachlorobutadiene	99.6%		99.6%	0.0%		< 1.0
Naphthalene	85.4%		87.6%	2.5%		< 3.0
1,2,3-Trichlorobenzene	91.2%		93.4%	2.4%		< 1.0

Table 4

QC Results 1,4-Dioxane– October

TABLE 4
QC Report

Lab # associated with qc samples: W2455 through W2463

	Matrix Spike	Matrix Spike Duplicate		LCS	Blank
	W2455	W2455			
Date Extracted:	10/14/08	10/14/08		10/14/08	10/14/08
Date Analyzed:	10/15/08	10/15/08		10/15/08	10/15/08

Compound	% Rec		% Rec	RPD		% Rec	ug/L
1,4-Dioxane	94.1%		93.4%	0.7%		93.6%	< 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. 013769 *

Page 1 of 1

Project Number:	Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: KUHLMAN ELECTRIC	Company: MARTIN & SCHOLLE	Report Due:
Project Location: CRYSTAL SPRINGS	Address:	Invoice To:
Sampled By (Print): Chuck Peel		Company:
		Address:
		P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
CSW-WA8-029	10/14/08	0810	W	7	A/B	1,4Dioxane + 8260B		W2455
CSW-WA3-029		0826		4	A			W2456
CSW-WA1-029		0836		8	A/B			W2457
CSW-WA2-029		0847		4	A			W2458
CSW-FB-029		0851		4	A			W2459
CSW-WA5-024		0921		7	A/B			W2460
CSW-WA6-024		0934		7	A/B			W2461
CSW-TP-029		0953		4	A			W2462
CSW-DUPLICATE		—		7	A/B			W2463

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

Relinquished By: Charles Peel	Date/Time: 10/14/08 1000	Received By:	Date/Time: 10/14/08 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

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 **837784146407**

Form I.D. No. **0200**

From *Please print and press hard.*

Date 10/15/08 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

Appendix C

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

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

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 + SLAGLE
CITY/STATE/ZIP: BLACK MOUNTAIN NC
E-MAIL ADDRESS:
PHONE #: FAX#:
SAMPLER'S SIGNATURE: Charles O. M. Peel

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 (*see below) Gas☐ Diesel☐ Oil☐ 8021☐ BTEX☐	Fuel Fingerprint (FIQ) 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, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	1,4 Dioxane by 8270 SIM				REMARKS
CSW-WH1-029	10/14/08	0836		W	5		X													X				
CSW-DUPLICATE	10/14/08	—		W	5		X													X				
TRIP BLANK	—	—		W	1																			

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: BORG 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 - need 0.5 µg/L Report Limit

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Charles O. M. Peel Date/Time: 10/15/08 1400	Signature ___ Date/Time ___	Signature ___ Date/Time ___	Signature ___ Date/Time ___
Printed Name: Charles O. M. Peel Firm: Peel Consulting	Printed Name ___ Firm ___	Printed Name ___ Firm ___	Printed Name ___ Firm ___