



July 12, 2004

Bladen County Solid Waste Management  
1522 Mercer Mill Road  
Elizabethtown, North Carolina 28337



Attention: **Mr. Ed Dowless**

Reference: **Results of Groundwater Assessment Monitoring  
Appendix I Sampling Event - June, 2004  
Bladen County Landfill  
Elizabethtown, North Carolina  
S&ME Project No. 1034-95-147**

Dear Mr. Dowless:

This correspondence comprises a report detailing analytical results and groundwater data obtained with regard to an Appendix I sampling event conducted by S&ME, Inc. at the former Bladen County Landfill in June, 2004.

As per a letter dated May 30, 2000 from Mr. Larry Rose with the North Carolina Division of Waste Management, Solid Waste Section, permission was granted for monitoring wells MW-2, MW-6 and the surface water samples to be eliminated from the semi-annual sampling requirements. Therefore, monitoring wells MW-2, MW-6 and the surface water samples were not sampled during this sampling event.

## **GROUNDWATER DATA**

On June 10 - 11, 2004, S&ME personnel collected groundwater data and samples from seven groundwater monitoring wells located at the former landfill site. Prior to sampling and initiation of data collection, each well was opened in order to allow water levels to equilibrate. The water level depth was then measured from the top of each well casing to the nearest .01 foot using an electronic water level indicator. The water level measurements are provided in the attached Table 1. As per our telephone conversation with Mr. Larry Rose in August 2001, a turbidity meter was used to collect turbidity readings from each well. Prior to the collection of the groundwater samples, the pH, temperature, specific conductivity and turbidity were measured for each well volume by a field meter. This data is provided in the attached Table 2 (Groundwater Parameters).

Wells were purged prior to sampling using disposable bailers. Wells were purged by bailing a quantity of water equal to a minimum of three times the volume of standing water in the well, or to dryness. Groundwater parameters (temperature, conductivity, pH and turbidity) were measured after each well volume was purged. These parameters are detailed in Table 2. As per Mr. Rose, the wells were sampled one day after they were purged to allow suspended solids in the water column to settle in order to reduce the possible interference of suspended solids with the RCRA Metal analyses.

After the completion of purging, groundwater samples were collected using the bailer. The groundwater samples were transferred to laboratory pre-prepared bottles containing hydrochloric acid and nitric acid for storage in a prechilled cooler. Hydrochloric acid and nitric acid were used to preserve samples for analysis to detect volatile compounds and metals, as per requirements set forth by US Environmental Protection Agency (EPA) protocols for individual analyses. After the sampling round was completed, samples were transported under standard chain-of-custody protocol to ENCO Laboratories, an analytical laboratory located in Cary, North Carolina.

**ANALYTICAL METHODOLOGY AND RESULTS**

As per Mr. Larry Rose with North Carolina Division of Waste Management, Solid Waste Section, the groundwater samples were analyzed for Appendix I volatile organic compounds and RCRA Metals. Table 3 summarizes the analytical results by well and constituent for the June 2004 sampling event. A copy of the laboratory results and the associated chain-of-custody are attached. The following table shows the listed constituents, detected in the June 2004 sampling event compared to the December 2003 sampling event.

Well No.	December 2003		June 2004	
	Metals (ug/L)	Organics (ug/L)	Metals (ug/L)	Organics (ug/L)
MW-1				
MW-3				
MW-4				
MW-5				
MW-7				
MW-8	<b>Cadmium 7.7 (total)</b>		<b>Cadmium 1.3 (total)</b>	
MW-9		c-1,2-Dichloroethene 6.4 Chlorobenzene 7.2		c-1,2-Dichloroethene 8.2 Chlorobenzene 7.4

Notes:

Constituents not listed were below the detection limit of the analytical method.  
 Constituents detected in quantities above regulatory levels set forth in 15A NCAC 2L, "Criteria and Standards Applicable to the Groundwaters of North Carolina" are printed in **bold type**.  
 For comparison purposes metal concentrations were converted from mg/L to ug/L.

S&ME appreciates the opportunity to work with you on this project. Should you have any questions or comments, or require additional information, please contact our office at (910) 323-1091.

Sincerely,

**S&ME, Inc.**

  
Jamie T. Honeycutt  
Environmental Staff

Senior Review by

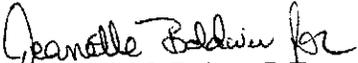
  
Michael W. Behen, P.E.  
Senior Geotechnical Engineer

TABLE 1 Monitoring Well and Sampling Data: June, 2004

WELL ID	Well Depth BTOC	Water Level BTOC	Approximate Volume Purged (Gallons)
MW-1	41.19	14.73	12.7
MW-3	21.50	10.23	4.00 <sup>A</sup>
MW-4	44.04	34.78	4.50
MW-5	30.00	23.81	1.00 <sup>A</sup>
MW-7	15.25	2.41	6.00
MW-8	30.60	17.58	4.00 <sup>A</sup>
MW-9	23.00	9.50	6.60

Notes:

All measurements in feet.

BTOC Below top of casing

<sup>A</sup> Well bailed dry prior to removal of three wells volumes

Table 2 Groundwater Parameters: June, 2004

		MW-1	MW-3 <sup>D</sup>	MW-4	MW-5 <sup>C</sup>	MW-7	MW-8 <sup>D</sup>	MW-9
<b>Initial</b>	Temperature <sup>A</sup>	68.0	70.0	71.0	68.0	66.0	68.0	65.0
	pH	6.6	4.2	7.2	6.7	6.4	6.8	6.1
	Conductivity <sup>B</sup>	92	470	423	465	445	250	1188
	Turbidity <sup>E</sup>	15.0	10.0	4.0	60.0	15.0	25.0	20.0
<b>1st Volume</b>	Temperature <sup>A</sup>	68.0	67.0	69.0	65.0	66.0	66.0	65.0
	pH	6.8	4.0	6.4	6.6	5.9	6.7	5.7
	Conductivity <sup>B</sup>	83	455	533	486	463	265	1160
	Turbidity <sup>E</sup>	30.0	90.0	10.0	190.0	16.0	45.0	50.0
<b>2nd Volume</b>	Temperature <sup>A</sup>	67.0	66.0	69.0	-	65.0	66	64.0
	pH	6.7	4.0	6.3	-	5.8	6.6	5.9
	Conductivity <sup>B</sup>	85	453	522	-	445	250	1180
	Turbidity <sup>E</sup>	40.0	125.0	18.0	-	25.0	56	65.0
<b>3rd Volume</b>	Temperature <sup>A</sup>	66.0	-	69.0	-	63.0	-	63.0
	pH	6.8	-	6.2	-	5.4	-	5.7
	Conductivity <sup>B</sup>	86	-	520	-	443	-	1170
	Turbidity <sup>E</sup>	45.0	-	25.0	-	25.0	-	60.0
<b>Turbidity<sup>E</sup> at time of sample collection</b>		10.0	80.0	12.0	25.0	5.0	35	30.0

Notes:

- A Measured in degrees Fahrenheit.
- B Measured in micorhms.
- C Well bailed dry after one well volume.
- D Well bailed dry after two well volumes.
- E Measured in NTU.

Table 3 Groundwater Analytical Results: June, 2004

Constituent	2L <sup>A</sup>	MW-1	MW-3	MW-4	MW-5	MW-7	MW-8	MW-9
c-1,2-Dichloroethene	70 ug/L							8.2
Chlorobenzene	50 ug/L							7.4
Cadmium (total)	0.005 mg/L						0.0013	

Notes:

Constituents not listed were below the detection limit of the analytical method.

- A Regulatory standards as set forth in 15A NCAC 2L, "Classifications and Standards Applicable to the Groundwaters of North Carolina" or in guidance documents issued by the NCDENR Solid Waste Section. **Analytical results greater than applicable standards are given in bold print.**

**APPENDIX  
LABORATORY DATA**

Environmental Conservation Laboratories, Inc.  
1015 Passport Way  
Cary, North Carolina 27513-2042  
919 / 677-1669  
Fax 919 / 677-9846  
www.encolabs.com



CLIENT : S&ME, Inc.  
ADDRESS: 409 Chicago Dr.  
Suite 116  
Fayetteville, NC 28306

REPORT # : CRY15987  
DATE SUBMITTED: June 14, 2004  
DATE REPORTED : June 28, 2004

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ATTENTION: Jamie Honeycutt

**SAMPLE IDENTIFICATION**

Samples submitted and  
identified by client as:

**REFERENCE:** BLADEN COUNTY LF

Bladen County LF

06/11/04

CRY15987-1 : MW-1 @ 15:30  
CRY15987-2 : MW-3 @ 13:45  
CRY15987-3 : MW-4 @ 13:15  
CRY15987-4 : MW-5 @ 14:30  
CRY15987-5 : MW-7 @ 14:20  
CRY15987-6 : MW-8 @ 14:00  
CRY15987-7 : MW-9 @ 14:10

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with JELAC Standards (May, 2001). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

PROJECT MANAGER

A handwritten signature in black ink, appearing to read "Chuck Smith", written over a horizontal line.

Chuck Smith

ENCO LABORATORIES

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 PROJECT NAME : Bladen County LF

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 -  
VOLATILE ORGANICS

	<u>MW-1</u>	<u>MW-3</u>	<u>Units</u>
Chloromethane	10 U	10 U	ug/L
Vinyl Chloride	10 U	10 U	ug/L
Bromomethane	10 U	10 U	ug/L
Chloroethane	10 U	10 U	ug/L
Trichlorofluoromethane	5.0 U	5.0 U	ug/L
1,1-Dichloroethene	5.0 U	5.0 U	ug/L
Acetone	100 U	100 U	ug/L
Iodomethane	10 U	10 U	ug/L
Carbon Disulfide	100 U	100 U	ug/L
Methylene Chloride	10 U	10 U	ug/L
Acrylonitrile	200 U	200 U	ug/L
1,2-Dichloroethene	5.0 U	5.0 U	ug/L
1,1-Dichloroethane	5.0 U	5.0 U	ug/L
Vinyl Acetate	50 U	50 U	ug/L
1,2-Dichloroethene	5.0 U	5.0 U	ug/L
2-Butanone	100 U	100 U	ug/L
Bromochloromethane	5.0 U	5.0 U	ug/L
Chloroform	5.0 U	5.0 U	ug/L
1,1,1-Trichloroethane	5.0 U	5.0 U	ug/L
Carbon tetrachloride	10 U	10 U	ug/L
1,2-Dichloroethane	5.0 U	5.0 U	ug/L
Benzene	5.0 U	5.0 U	ug/L
Trichloroethene	5.0 U	5.0 U	ug/L
1,2-Dichloropropane	5.0 U	5.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 (cont.) -

<u>VOLATILE ORGANICS</u>	<u>MW-1</u>	<u>MW-3</u>	<u>Units</u>
Dibromomethane	10 U	10 U	ug/L
Bromodichloromethane	5.0 U	5.0 U	ug/L
1,3-Dichloropropene	10 U	10 U	ug/L
4-Methyl-2-Pentanone	100 U	100 U	ug/L
Toluene	5.0 U	5.0 U	ug/L
1,3-Dichloropropene	10 U	10 U	ug/L
1,1,2-Trichloroethane	5.0 U	5.0 U	ug/L
Tetrachloroethene	5.0 U	5.0 U	ug/L
2-Hexanone	50 U	50 U	ug/L
Dibromochloromethane	5.0 U	5.0 U	ug/L
1,2-Dibromoethane	5.0 U	5.0 U	ug/L
Chlorobenzene	5.0 U	5.0 U	ug/L
1,1,1,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
Ethylbenzene	5.0 U	5.0 U	ug/L
m-Xylene & p-Xylene	5.0 U	5.0 U	ug/L
o-Xylene	5.0 U	5.0 U	ug/L
Styrene	10 U	10 U	ug/L
Bromoform	5.0 U	5.0 U	ug/L
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
1,2,3-Trichloropropane	15 U	15 U	ug/L
1,4-Dichloro-2-Butene	100 U	100 U	ug/L
1,4-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dibromo-3-Chloropropane	25 U	25 U	ug/L

<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	90	90	73-138
1,8-Toluene	100	96	77-118
Bromofluorobenzene	102	100	70-130
Date Analyzed	06/18/04 04:21	06/18/04 04:48	

= Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>MW-1</u>	<u>MW-3</u>	<u>Units</u>
Arsenic Date Analyzed	6010	0.010 U 06/23/04 15:52	0.010 U 06/23/04 16:01	mg/L
Barium Date Analyzed	6010	0.50 U 06/23/04 15:52	0.50 U 06/23/04 16:01	mg/L
Cadmium Date Analyzed	6010	0.0010 U 06/23/04 15:52	0.0010 U 06/23/04 16:01	mg/L
Chromium Date Analyzed	6010	0.010 U 06/23/04 15:52	0.010 U 06/23/04 16:01	mg/L
Lead Date Analyzed	6010	0.010 U 06/23/04 15:52	0.010 U 06/23/04 16:01	mg/L
Selenium Date Analyzed	6010	0.020 U 06/23/04 15:52	0.020 U 06/23/04 16:01	mg/L
Silver Date Analyzed	6010	0.010 U 06/23/04 15:52	0.010 U 06/23/04 16:01	mg/L
Mercury Date Analyzed	7470	0.00050 U 06/14/04 16:40	0.00050 U 06/14/04 16:50	mg/L

\* = Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 -  
 VOLATILE ORGANICS

	<u>MW-4</u>	<u>MW-5</u>	<u>Units</u>
Chloromethane	10 U	10 U	ug/L
Vinyl Chloride	10 U	10 U	ug/L
Bromomethane	10 U	10 U	ug/L
Chloroethane	10 U	10 U	ug/L
Trichlorofluoromethane	5.0 U	5.0 U	ug/L
1,1-Dichloroethene	5.0 U	5.0 U	ug/L
Acetone	100 U	100 U	ug/L
Iodomethane	10 U	10 U	ug/L
Carbon Disulfide	100 U	100 U	ug/L
Methylene Chloride	10 U	10 U	ug/L
Acrylonitrile	200 U	200 U	ug/L
1,2-Dichloroethene	5.0 U	5.0 U	ug/L
1,1-Dichloroethane	5.0 U	5.0 U	ug/L
Vinyl Acetate	50 U	50 U	ug/L
1,2-Dichloroethene	5.0 U	5.0 U	ug/L
2-Butanone	100 U	100 U	ug/L
Bromochloromethane	5.0 U	5.0 U	ug/L
Chloroform	5.0 U	5.0 U	ug/L
1,1,1-Trichloroethane	5.0 U	5.0 U	ug/L
Carbon tetrachloride	10 U	10 U	ug/L
1,2-Dichloroethane	5.0 U	5.0 U	ug/L
Benzene	5.0 U	5.0 U	ug/L
Trichloroethene	5.0 U	5.0 U	ug/L
1,2-Dichloropropane	5.0 U	5.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I,8260 (cont.) - <u>VOLATILE ORGANICS</u>	<u>MW-4</u>	<u>MW-5</u>	<u>Units</u>
Dibromomethane	10 U	10 U	ug/L
Bromodichloromethane	5.0 U	5.0 U	ug/L
c-1,3-Dichloropropene	10 U	10 U	ug/L
4-Methyl-2-Pentanone	100 U	100 U	ug/L
Toluene	5.0 U	5.0 U	ug/L
t-1,3-Dichloropropene	10 U	10 U	ug/L
1,1,2-Trichloroethane	5.0 U	5.0 U	ug/L
Tetrachloroethene	5.0 U	5.0 U	ug/L
2-Hexanone	50 U	50 U	ug/L
Dibromochloromethane	5.0 U	5.0 U	ug/L
1,2-Dibromoethane	5.0 U	5.0 U	ug/L
Chlorobenzene	5.0 U	5.0 U	ug/L
1,1,1,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
Ethylbenzene	5.0 U	5.0 U	ug/L
n-Xylene & p-Xylene	5.0 U	5.0 U	ug/L
o-Xylene	5.0 U	5.0 U	ug/L
Styrene	10 U	10 U	ug/L
Bromoform	5.0 U	5.0 U	ug/L
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
1,2,3-Trichloropropane	15 U	15 U	ug/L
t-1,4-Dichloro-2-Butene	100 U	100 U	ug/L
1,4-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dibromo-3-Chloropropane	25 U	25 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	91	92	73-138
o8-Toluene	97	102	77-118
Bromofluorobenzene	102	100	70-130
Date Analyzed	06/18/04 05:14	06/18/04 05:41	

U = Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>MW-4</u>	<u>MW-5</u>	<u>Units</u>
Arsenic Date Analyzed	6010	0.010 U 06/23/04 16:11	0.010 U 06/23/04 16:20	mg/L
Barium Date Analyzed	6010	0.50 U 06/23/04 16:11	0.50 U 06/23/04 16:20	mg/L
Cadmium Date Analyzed	6010	0.0010 U 06/23/04 16:11	0.0010 U 06/23/04 16:20	mg/L
Chromium Date Analyzed	6010	0.010 U 06/23/04 16:11	0.010 U 06/23/04 16:20	mg/L
Lead Date Analyzed	6010	0.010 U 06/23/04 16:11	0.010 U 06/23/04 16:20	mg/L
Selenium Date Analyzed	6010	0.020 U 06/23/04 16:11	0.020 U 06/23/04 16:20	mg/L
Silver Date Analyzed	6010	0.010 U 06/23/04 16:11	0.010 U 06/23/04 16:20	mg/L
Mercury Date Analyzed	7470	0.00050 U 06/14/04 16:57	0.00050 U 06/14/04 17:01	mg/L

U = Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 -  
VOLATILE ORGANICS

	<u>MW-7</u>	<u>MW-8</u>	<u>Units</u>
Chloromethane	10 U	10 U	ug/L
Vinyl Chloride	10 U	10 U	ug/L
Bromomethane	10 U	10 U	ug/L
Chloroethane	10 U	10 U	ug/L
Trichlorofluoromethane	5.0 U	5.0 U	ug/L
1,1-Dichloroethene	5.0 U	5.0 U	ug/L
Acetone	100 U	100 U	ug/L
Iodomethane	10 U	10 U	ug/L
Carbon Disulfide	100 U	100 U	ug/L
Methylene Chloride	10 U	10 U	ug/L
Acrylonitrile	200 U	200 U	ug/L
c-1,2-Dichloroethene	5.0 U	5.0 U	ug/L
1,1-Dichloroethane	5.0 U	5.0 U	ug/L
Vinyl Acetate	50 U	50 U	ug/L
c-1,2-Dichloroethene	5.0 U	5.0 U	ug/L
2-Butanone	100 U	100 U	ug/L
Bromochloromethane	5.0 U	5.0 U	ug/L
Chloroform	5.0 U	5.0 U	ug/L
1,1,1-Trichloroethane	5.0 U	5.0 U	ug/L
Carbon tetrachloride	10 U	10 U	ug/L
1,2-Dichloroethane	5.0 U	5.0 U	ug/L
Benzene	5.0 U	5.0 U	ug/L
Trichloroethene	5.0 U	5.0 U	ug/L
1,2-Dichloropropane	5.0 U	5.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 (cont.) -

<u>VOLATILE ORGANICS</u>	<u>MW-7</u>	<u>MW-8</u>	<u>Units</u>
Dibromomethane	10 U	10 U	ug/L
Bromodichloromethane	5.0 U	5.0 U	ug/L
1,3-Dichloropropene	10 U	10 U	ug/L
2-Methyl-2-Pentanone	100 U	100 U	ug/L
Toluene	5.0 U	5.0 U	ug/L
1,3-Dichloropropene	10 U	10 U	ug/L
1,1,2-Trichloroethane	5.0 U	5.0 U	ug/L
Tetrachloroethene	5.0 U	5.0 U	ug/L
2-Hexanone	50 U	50 U	ug/L
Dibromochloromethane	5.0 U	5.0 U	ug/L
1,2-Dibromoethane	5.0 U	5.0 U	ug/L
Chlorobenzene	5.0 U	5.0 U	ug/L
1,1,1,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
Ethylbenzene	5.0 U	5.0 U	ug/L
m-Xylene & p-Xylene	5.0 U	5.0 U	ug/L
o-Xylene	5.0 U	5.0 U	ug/L
Styrene	10 U	10 U	ug/L
Bromoform	5.0 U	5.0 U	ug/L
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
1,2,3-Trichloropropane	15 U	15 U	ug/L
1,4-Dichloro-2-Butene	100 U	100 U	ug/L
1,4-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dibromo-3-Chloropropane	25 U	25 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	91	91	73-138
1,8-Toluene	101	98	77-118
Bromofluorobenzene	98	99	70-130
Date Analyzed	06/18/04 06:07	06/18/04 06:34	

= Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : CRY15987  
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RESULTS OF ANALYSIS

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>MW-7</u>	<u>MW-8</u>	<u>Units</u>
Arsenic Date Analyzed	6010	0.010 U 06/23/04 16:30	0.010 U 06/23/04 16:40	mg/L
Barium Date Analyzed	6010	0.50 U 06/23/04 16:30	0.50 U 06/23/04 16:40	mg/L
Cadmium Date Analyzed	6010	0.0010 U 06/23/04 16:30	<b>0.0013</b> 06/23/04 16:40	mg/L
Chromium Date Analyzed	6010	0.010 U 06/23/04 16:30	0.010 U 06/23/04 16:40	mg/L
Lead Date Analyzed	6010	0.010 U 06/23/04 16:30	0.010 U 06/23/04 16:40	mg/L
Selenium Date Analyzed	6010	0.020 U 06/23/04 16:30	0.020 U 06/23/04 16:40	mg/L
Silver Date Analyzed	6010	0.010 U 06/23/04 16:30	0.010 U 06/23/04 16:40	mg/L
Mercury Date Analyzed	7470	0.00050 U 06/14/04 17:05	0.00050 U 06/14/04 17:14	mg/L

= Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 -  
VOLATILE ORGANICS

	<u>MW-9</u>	<u>LAB BLANK</u>	<u>Units</u>
Chloromethane	10 U	10 U	ug/L
Vinyl Chloride	10 U	10 U	ug/L
Bromomethane	10 U	10 U	ug/L
Chloroethane	10 U	10 U	ug/L
Trichlorofluoromethane	5.0 U	5.0 U	ug/L
1,1-Dichloroethene	5.0 U	5.0 U	ug/L
Acetone	100 U	100 U	ug/L
Fluoromethane	10 U	10 U	ug/L
Carbon Disulfide	100 U	100 U	ug/L
Methylene Chloride	10 U	10 U	ug/L
Acrylonitrile	200 U	200 U	ug/L
cis-1,2-Dichloroethene	5.0 U	5.0 U	ug/L
1,1-Dichloroethane	5.0 U	5.0 U	ug/L
Vinyl Acetate	50 U	50 U	ug/L
trans-1,2-Dichloroethene	8.2	5.0 U	ug/L
2-Butanone	100 U	100 U	ug/L
Bromochloromethane	5.0 U	5.0 U	ug/L
Chloroform	5.0 U	5.0 U	ug/L
1,1,1-Trichloroethane	5.0 U	5.0 U	ug/L
Carbon tetrachloride	10 U	10 U	ug/L
1,2-Dichloroethane	5.0 U	5.0 U	ug/L
Benzene	5.0 U	5.0 U	ug/L
Trichloroethene	5.0 U	5.0 U	ug/L
1,2-Dichloropropane	5.0 U	5.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

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 REFERENCE : BLADEN COUNTY LF  
 PROJECT NAME : Bladen County LF

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RESULTS OF ANALYSIS

EPA METHOD APPENDIX I, 8260 (cont.) -

<u>VOLATILE ORGANICS</u>	<u>MW-9</u>	<u>LAB BLANK</u>	<u>Units</u>
Dibromomethane	10 U	10 U	ug/L
Bromodichloromethane	5.0 U	5.0 U	ug/L
c-1,3-Dichloropropene	10 U	10 U	ug/L
4-Methyl-2-Pentanone	100 U	100 U	ug/L
Toluene	5.0 U	5.0 U	ug/L
t-1,3-Dichloropropene	10 U	10 U	ug/L
1,1,2-Trichloroethane	5.0 U	5.0 U	ug/L
Tetrachloroethene	5.0 U	5.0 U	ug/L
2-Hexanone	50 U	50 U	ug/L
Dibromochloromethane	5.0 U	5.0 U	ug/L
1,2-Dibromoethane	5.0 U	5.0 U	ug/L
Chlorobenzene	7.4	5.0 U	ug/L
1,1,1,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
Ethylbenzene	5.0 U	5.0 U	ug/L
m-Xylene & p-Xylene	5.0 U	5.0 U	ug/L
o-Xylene	5.0 U	5.0 U	ug/L
Styrene	10 U	10 U	ug/L
Bromoform	5.0 U	5.0 U	ug/L
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	ug/L
1,2,3-Trichloropropane	15 U	15 U	ug/L
t-1,4-Dichloro-2-Butene	100 U	100 U	ug/L
1,4-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dichlorobenzene	5.0 U	5.0 U	ug/L
1,2-Dibromo-3-Chloropropane	25 U	25 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	92	87	73-138
o8-Toluene	96	95	77-118
Bromofluorobenzene	101	96	70-130
Date Analyzed	06/18/04 07:00	06/17/04 21:37	

U = Compound was analyzed for but not detected to the level shown.

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RESULTS OF ANALYSIS

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>MW-9</u>	<u>LAB BLANK</u>	<u>Units</u>
Arsenic Date Analyzed	6010	0.010 U 06/23/04 16:49	0.010 U 06/23/04 14:43	mg/L
Barium Date Analyzed	6010	0.50 U 06/23/04 16:49	0.50 U 06/23/04 14:43	mg/L
Cadmium Date Analyzed	6010	0.0010 U 06/23/04 16:49	0.0010 U 06/23/04 14:43	mg/L
Chromium Date Analyzed	6010	0.010 U 06/23/04 16:49	0.010 U 06/23/04 14:43	mg/L
Lead Date Analyzed	6010	0.010 U 06/23/04 16:49	0.010 U 06/23/04 14:43	mg/L
Selenium Date Analyzed	6010	0.020 U 06/23/04 16:49	0.020 U 06/23/04 14:43	mg/L
Silver Date Analyzed	6010	0.010 U 06/23/04 16:49	0.010 U 06/23/04 14:43	mg/L
Mercury Date Analyzed	7470	0.00050 U 06/14/04 17:18	0.00050 U 06/14/04 16:33	mg/L

U = Compound was analyzed for but not detected to the level shown.

**ENCO LABORATORIES**

**REPORT #** : CRY15987

**DATE REPORTED:** June 28, 2004

**REFERENCE** : BLADEN COUNTY LF

**PROJECT NAME** : Bladen County LF

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**LABORATORY CERTIFICATIONS**

Laboratory Certification: NCDENR:591

All analyses reported with this project were analyzed by the facility indicated unless identified below.

ENCO LABORATORIES

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 PROJECT NAME : Bladen County LF

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QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY LCS/MS/MSD</u>	<u>LCS LIMITS</u>	<u>MS/MSD LIMITS</u>	<u>RPD MS/MSD</u>	<u>RPD LIMITS</u>
<u>EPA Method APPENDIX I, 8260</u>					
1,1-Dichloroethene	92/101/ 96	64-139	36-177	5	30
Benzene	86/ 94/ 85	69-115	53-150	10	23
Trichloroethene	92/ 98/ 93	74-118	64-124	5	25
Toluene	90/ 94/ 91	77-117	40-161	3	23
Chlorobenzene	95/ 97/ 97	76-118	44-128	<1	22
<u>TOTAL METALS</u>					
Arsenic, 6010	97/100/108	82-117	64-126	8	12
Barium, 6010	102/104/113	72-125	74-119	8	11
Cadmium, 6010	99/103/111	72-120	68-121	7	12
Chromium, 6010	97/102/110	78-119	73-120	8	17
Lead, 6010	102/106/115	72-121	68-126	8	19
Selenium, 6010	120/126/135*	82-127	65-129	7	10
Silver, 6010	107/107/111	80-128	69-121	4	12
Mercury, 7470	105/104/106	81-126	70-136	2	12

\* = Recovery outside historical limits.  
 < = Less Than  
 MS = Matrix Spike  
 MSD = Matrix Spike Duplicate  
 LCS = Laboratory Control Standard  
 RPD = Relative Percent Difference



**ENVIRONMENTAL CONSERVATION LABORATORIES**

OSARF # P12303

4810 Executive Park Court, Suite 211  
 Jacksonville, Florida 32216-6069  
 Ph. (904) 296-3007 • Fax (904) 296-6210

10207 General Drive  
 Orlando, Florida 32824-8529  
 Ph. (407) 826-6314 • Fax (407) 850-6945

1015 Passport Way  
 Cary, North Carolina 27513  
 Ph. (919) 677-1669 • Fax (919) 677-9846

ENCO CompQAP No.: 960038G/0

**CHAIN OF CUSTODY RECORD**

PROJECT REFERENCE: **Bladen County LF** PROJECT ID: **PH100** COUNTY LF: **PH100** P.O. NUMBER: **323-1091** MATRIX TYPE: **PH100** REQUIRED ANALYSIS: **PH100** PAGE: **1** OF: **1**

PROJECT LOC. (State): **NC** SAMPLE(S) NAME: **Jamie Honeycutt** PROJECT ID: **PH100** COUNTY LF: **PH100**  
 CLIENT NAME: **S&ME, Inc.** CLIENT PROJECT MANAGER: **Jamie Honeycutt**  
 CLIENT ADDRESS (CITY, STATE, ZIP): **409 Chicago Dr. Suite 116 Fayetteville, NC 28306**

STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	MATRIX TYPE										PRESERVATIVE	REMARKS		
						SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOIL/SOLID/SEDIMENT	NONAQUEOUS LIQUID (or, solvent, etc.)	AIR	SLUDGE	OTHER	NUMBER OF CONTAINERS SUBMITTED				
1	6/10/04	3:30	X		MW-1	X										1	3		
2		1:45	X		MW-3	X										1	3		
3		1:15	X		MW-4	X										1	3		
4		2:30	X		MW-5	X										1	3		
5		2:30	X		MW-7	X										1	3		
6		2:00	X		MW-8	X										1	3		
7		2:10	X		MW-9	X										1	3		
8																			
9																			
10																			
11																			
12																			
13																			
14																			

RECEIVED BY: *[Signature]* DATE: 6/10/04 TIME: 1:50

SAMPLE KIT PREPARED BY: **DORLANDO** DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ RECEIVED BY: (SIGNATURE) \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 RELINQUISHED BY: (SIGNATURE) \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ RECEIVED BY: (SIGNATURE) \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 RECEIVED BY: (SIGNATURE) \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ RECEIVED BY: (SIGNATURE) \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

RECEIVED FOR LABORATORY (SIGNATURE) \_\_\_\_\_ DATE: 6/12/04 TIME: 11:00 CUSTODY INTACT ENCO LOG NO. \_\_\_\_\_ REMARKS: 1:50