

NC DENR  
 Division of Waste Management - Solid Waste

**Environmental Monitoring Reporting Form**

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

**Instructions:**

- Prepare one form for each individually monitored unit.
- Please type or print legibly.
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(i)).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

**Solid Waste Monitoring Data Submittal Information**

Name of entity submitting data (laboratory, consultant, facility owner):  
 Richardson Smith Gardner and Associates, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joan A. Smyth, P.G. Phone: 919-828-0577 x 221  
 E-mail: joan@rsgengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Halifax Co. Coal Ash Landfill	S.R. 1417 Auraelian Springs, NC	42-04	.0500	February 16, 2010

**Environmental Status: (Check all that apply)**

- Initial/Background Monitoring  Detection Monitoring  Assessment Monitoring  Corrective Action

**Type of data submitted: (Check all that apply)**

- Groundwater monitoring data from monitoring wells  Methane gas monitoring data  
 Groundwater monitoring data from private water supply wells  Corrective action data (specify) \_\_\_\_\_  
 Leachate monitoring data  Other(specify) \_\_\_\_\_  
 Surface water monitoring data

**Notification attached?**

- No. No groundwater or surface water standards were exceeded.  
 Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.  
 Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

**Certification**

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Joan A. Smyth, P.G. Senior Hydrogeologist 919-828-0577 x221

Facility Representative Name (Print) Title (Area Code) Telephone Number  
 Signature Joan Smyth Date 3-18-10 Affix NC Licensed Professional Geologist Seal

14 N. Boylan Avenue Raleigh, NC  
 Facility Representative Address  
 C0828



**Halifax County Coal Ash Landfill**

**Ground Water Monitoring Report**

**February 2010 Semi-annual  
Monitoring Event**

**Halifax County Landfill  
Halifax County, North Carolina  
NC Solid Waste Permit # 42-04**

Prepared for:  
**Halifax County Solid Waste Department**  
P. O. Box 70  
Halifax, North Carolina 27839

**March 2010**

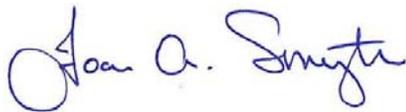


**Ground Water Monitoring Report  
Halifax County Coal Ash Landfill  
February 2010 Semi - Annual Report**

Prepared for:

**Halifax County Solid Waste Department  
P.O. Box 70  
Halifax, North Carolina 27839**

RSG Project No. **Halifax - 8**



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Joan A. Smyth, P.G.  
Senior Hydrogeologist



**March 2010**



PRINTED ON 100% RECYCLED PAPER

**Halifax County Coal Ash Landfill**

**Semi-annual Ground Water Monitoring Report  
February 2010 Monitoring Event**

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## 1.0 Introduction

The Halifax County Coal Ash Landfill, operating under Solid Waste Permit #42-04, is required to submit semi-annual ground water monitoring reports for ground water monitoring. This report presents the results of the first semi-annual monitoring event for 2010, conducted on February 16, 2010. This event was performed to comply with the semi-annual monitoring schedule required by NC Solid Waste Regulations.

The Halifax County Coal Ash Landfill is a monofill landfill that only accepts coal ash from power generation. The ground water monitoring network consists of six (6) wells located around the perimeter of the landfill (**Figure 1**). Also included in the monitoring network are one surface water sampling point, a sedimentation basin discharge location, and two sediment sampling locations in the stream immediately upgradient and downgradient of the sedimentation basin discharge (**Figure 1**).

This report includes summaries of the field procedures, laboratory analyses, and ground water characterization. Also included are summary tables of the results, and laboratory analytical reports.

## 2.0 Sampling Procedures

The sampling event, performed by Environment 1, Inc., consisted of collecting samples from six ground water wells (MW-8, MW-9, MW-10, MW-11, MW-12, and MW-17), shown in **Figure 1**. A surface water sample was collected from one location (SW-1). Sediment samples were collected upstream and downstream of the sedimentation basin discharge point.

Sampling methods followed the protocol outlined in the Solid Waste Section Guidelines for Groundwater, Soil and Surface Water Sampling<sup>1</sup>. The depth to water in each well was gauged prior to purging and sampling. Field measurements of pH, specific conductivity, turbidity and temperature were obtained from each well. Field parameter results are included in **Table 1**.

All samples were collected by Environment 1, Inc. in laboratory prepared containers for the specified analytical procedures. Sampling equipment (bailers) were cleaned in the laboratory and transported to the site in aluminum foil. Ground water samples were properly preserved, placed on ice, and transported to the laboratory facility within the specified holding times for each analysis.

## 3.0 Site Hydrogeology

A review of the 1985 North Carolina Geological Map as well as *Ground Water in the Halifax Area, North Carolina* (Dept. of Conservation and Development Bulletin #51, 1946) indicates that the landfill site is situated on the eastern edge of the Eastern Piedmont Physiographic Province. The site is just west of the Coastal Plain overlap. Western Halifax County is underlain by an assemblage of felsic to intermediate crystalline igneous and metamorphic rocks of early to late Paleozoic age. The rocks of the eastern piedmont exhibit a northeast strike and locally dip gently eastward as a result of regional metamorphism and folding which produced a

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<sup>1</sup> Solid Waste Section Guidelines for Groundwater, Soil and surface Water Sampling, NCDENR, DWM, April 2008.

broad plunging anticline. The area was simultaneously intruded by a number of felsic (granite) plutons. The rock formation underlying the subject site is a granitic pluton identified as the Butterwood Creek intrusive.

Depths to ground water generally range from near surface in lowland areas along Brewer's Creek and its tributary to up to 45 ft. below grade in the area of MW-12. Ground water at the site is flowing generally to the south.

## **4.0 Sample Analysis and Results**

### **4.1 Laboratory Analysis**

The samples were placed in a cooler with ice and were transported to Environment 1, Inc., a North Carolina certified laboratory (NC Wastewater ID #10). Laboratory analysis consisted of the full suite of RCRA metals as well as indicator parameters total organic carbon, sulfate and chloride. Parameters were reported at NC Solid Waste Section Practical Quantitation Limits (SWSLs). The laboratory analytical report is included as **Appendix A**.

### **4.2 Field and Laboratory Results**

The field parameter results (**Table 1**) have remained consistent with previous sampling events. Analyzed constituents that were detected are presented in **Table 2**.

One (1) inorganic constituent; zinc (MW-10 & MW-12) shown in **Table 2**, was detected above the Solid Waste Section Reporting Limits (SWSLs). Constituents detected below the SWSL are also included in **Table 2** and are denoted as "J" values. No constituents were detected above the 2L groundwater standards.

No constituents were detected above the SWSLs in the surface water sample. Surface water sampling location SW-1 is located immediately downgradient of the sedimentation basin outfall and is shown on **Figure 1**. Four (4) inorganic constituents; arsenic, mercury, selenium and zinc were detected above the SWSLs in Basin#1. Of the four constituents, mercury and selenium were detected above the 2L groundwater standards. No constituents were detected in sediment samples collected upstream and downstream of the sedimentation basin discharge point.

## **5.0 Ground Water Characterization**

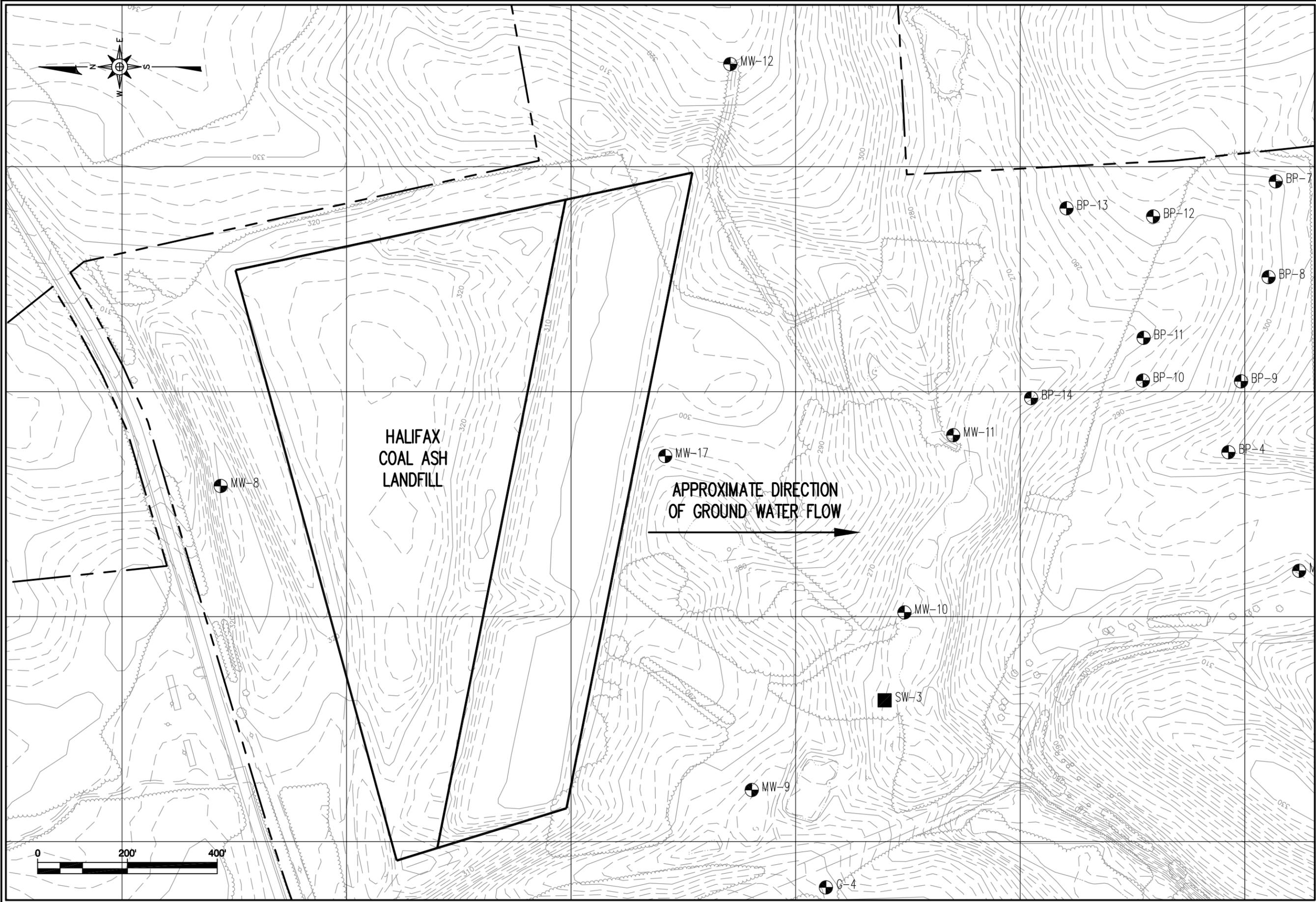
The depth to water data indicates that ground water is flowing generally to the east towards the unnamed tributary to Brewer's Creek. This is consistent with ground water flow patterns previously detected for the site. The ground water flow map is attached as **Figure 1**.

## **6.0 Conclusions**

A review of constituent data indicates no ground water impact at the site. One (1) inorganic constituent; zinc (MW-10 & MW-12) and four inorganic constituents; arsenic, mercury, selenium and zinc (Basin#1) were detected above the SWSLs. These detections are likely due to the elevated turbidity in the sample. The next semi-annual event is scheduled for August 2010. A report will be submitted upon receipt of the results of that sampling event.

Figures

G:\CAD\Halifax\Halifax-8\sheets\HALI-B0103.dwg - 2/19/2008 5:46 PM



  
**RICHARDSON SMITH GARDNER  
& ASSOCIATES**  
 14 N. Boylan Ave.  
 Raleigh, N.C. 27603  
 www.rsgengineers.com  
 ph: 919-826-0577  
 fax: 919-826-3899

FIGURE NO.	1
SCALE:	AS SHOWN
CHECKED BY:	J.A.S.
PROJECT NO.	HALIFAX-8
FILE NAME	HALI-B0103
DRAWN BY:	C.T.J.
DATE:	Feb. 2008

TITLE:

**DIRECTION OF  
GROUND WATER FLOW  
HALIFAX COAL ASH LANDFILL  
AURELIAN SPRINGS, NC**

Tables

**Table 1**  
**Halifax County Coal Ash Landfill**  
**Field Parameters**  
**2/16/2010**

Monitoring Location	pH (std units)	Static Water Level (feet)	Specific Conductivity (umhos/cm)	Temperature (degrees C)	Turbidity (NTU)
MW-8	4.75	7.71	82	8	2.7
MW-9	4.9	8.11	37	11	11
MW-10	5.3	2.89	44	8	40
MW-11	6.22	4.49	104	9	36
MW-12	4.61	42.07	31	12	120
MW-17	4.81	17.19	21	13	45
SW-1	6.5	nm	89	5	4.6
Sed Basin 1	6.8	nm	4108.0	7.0	1.8

nm - Not Measured



By: KBS  
Date: 3/8/2010

**Table 2**  
**Halifax County Coal Ash Landfill**  
**Detected Inorganic Constituents**  
**2/16/2010**

Monitoring Location	SWSL*	2L GW Standard	MW-8	MW-9	MW-10	MW-11	MW-12	MW-17	Sed Basin 1
Arsenic	10	50	ND	ND	0.4J	0.2 J	0.3 J	ND	<b>15</b>
Barium	100	2000	57.1 J	27.6 J	66.5 J	12.1 J	58.7 J	31.2 J	50.6 J
Cadmium	1	1.75	0.2 J	ND	0.6 J	ND	0.2 J	0.1 J	0.1 J
Chromium, total	10	50	ND	ND	ND	ND	1.3 J	0.7 J	5.5 J
Copper	10	1000	0.6 J	0.7 J	2.3 J	1.5 J	5.8 J	3.3 J	1.3 J
Lead	10	15	1.2 J	0.1 J	4.3 J	0.2 J	1.7 J	0.4 J	ND
Mercury	0.2	1.05	ND	ND	ND	ND	0.04 J	0.04 J	<b>1.1</b>
Selenium	10	50	ND	ND	ND	ND	0.2 J	ND	<b>101</b>
Silver	10	17.5	ND	0.1 J	0.2 J	0.1 J	0.1 J	0.1 J	0.1 J
Zinc	10	1050	4.5 J	3.6 J	<b>18</b>	3.2 J	<b>14</b>	5.9 J	<b>18</b>

Monitoring Location	SWSL*	Surface Water Standard	SW-1	Sediment #1 Upstream	Sediment #2 Downstream
Arsenic	200	50	0.6 J	ND	ND
Barium	5000	-	18.1 J	ND	ND
Cadmium	100	2	ND	ND	ND
Chromium, total	100	50	ND	ND	ND
Copper	10	1000	0.5 J	ND	ND
Lead	100	25	0.1 J	ND	ND
Mercury	0.57	0.012	ND	ND	ND
Selenium	200	5	0.5 J	ND	ND
Silver	100	0.06	0.1 J	ND	ND
Zinc	10	-	1.8 J	ND	ND

- ND - Not detected at or above PQL
- Shading - Levels above 2L standard
- Bold Letters - Levels below 2L standard
- NA - Constituent Not Analyzed
- J - Detected constituents below PQL limit
- nm - Not Measured

All SWSL's and 2L Standards and Results are in ug/l.  
MW-8 and Basin#1 were found to be dry during this event.

\* **SWSL Standards are different for Monitoring wells and Sediment Samples.**

Appendix A

Laboratory Analytical Report

REC'D MAR 03 2010

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6042

HALIFAX CO. (COAL ASH LANDFILL)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 02/18/10  
DATE REPORTED : 02/26/10

REVIEWED BY: 

PARAMETERS	MDL	SWSL	Well	Well	Well	Well	Well	Analysis Date	Analyst	Method Code			
			#8	#9	#10	#11	#12						
PH (field measurement), Units			4.75	4.94	5.30	6.22	4.61	02/18/10	RJH	SM4500HB			
Total Organic Carbon, mg/l	0.15	1.0	---	U	---	U	---	U	02/18/10	SEJ	SM5310C		
Chloride, mg/l	5.0	5.0	---	U	---	U	7	---	U	02/21/10	JIJ	SM4500-CLB	
Sulfate, mg/l	5.0	250.0	15.2	J	---	U	---	U	02/22/10	TRB	SM426C		
Arsenic, ug/l	0.17	10.0	---	U	---	U	0.4	J	0.2	J	02/25/10	CMF	EPA200.8
Barium, ug/l	0.04	100.0	57.1	J	27.6	J	66.5	J	12.1	J	02/25/10	CMF	EPA200.8
Cadmium, ug/l	0.04	1.0	0.2	J	---	U	0.6	J	---	U	02/25/10	CMF	EPA200.8
Copper, ug/l	0.04	10.0	0.6	J	0.7	J	2.3	J	1.5	J	02/25/10	CMF	EPA200.8
Total Chromium, ug/l	0.10	10.0	---	U	---	U	---	U	1.3	J	02/25/10	CMF	EPA200.8
Lead, ug/l	0.04	10.0	1.2	J	0.1	J	4.3	J	0.2	J	02/25/10	CMF	EPA200.8
Mercury, ug/l	0.03	0.20	---	U	---	U	---	U	0.04	J	02/25/10	CMF	EPA200.8
Selenium, ug/l	0.12	10.0	---	U	---	U	---	U	0.2	J	02/25/10	CMF	EPA200.8
Silver, ug/l	0.04	10.0	---	U	0.1	J	0.2	J	0.1	J	02/25/10	CMF	EPA200.8
Zinc, ug/l	0.14	10.0	4.5	J	3.6	J	18	---	3.2	J	02/25/10	CMF	EPA200.8
Turbidity, NTU	1.0	1.0	2.7	---	11	---	40	---	36	---	02/18/10	JIJ	SM2130B
Conductivity (at 25c), uMhos	1.0	1.0	82	---	37	---	44	---	104	---	02/18/10	RJH	SM2510B
Temperature, °C			8	---	11	---	8	---	9	---	02/18/10	RJH	SM2550B
Static Water Level, feet			7.71	---	8.11	---	2.89	---	4.49	---	02/18/10	RJH	
Well Depth, feet			23.29	---	24.97	---	16.22	---	21.71	---	02/18/10	RJH	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6042

HALIFAX CO. (COAL ASH LANDFILL)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 02/18/10  
DATE REPORTED : 02/26/10

REVIEWED BY: 

PARAMETERS	MDL	Well SWSL #17	Analysis		Method Code
			Date	Analyst	
PH (field measurement), Units			4.81	02/18/10 RJH	SM4500HB
Total Organic Carbon, mg/l	0.15	1.0	--- U	02/18/10 SEJ	SM5310C
Chloride, mg/l	5.0	5.0	--- U	02/21/10 JIJ	SM4500-CLB
Sulfate, mg/l	5.0	250.0	--- U	02/22/10 TRB	SM426C
Arsenic, ug/l	0.17	10.0	--- U	02/25/10 CMF	EPA200.8
Barium, ug/l	0.04	100.0	31.2 J	02/25/10 CMF	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	02/25/10 CMF	EPA200.8
Copper, ug/l	0.04	10.0	3.3 J	02/25/10 CMF	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.7 J	02/25/10 CMF	EPA200.8
Lead, ug/l	0.04	10.0	0.4 J	02/25/10 CMF	EPA200.8
Mercury, ug/l	0.03	0.20	0.04 J	02/25/10 CMF	EPA200.8
Selenium, ug/l	0.12	10.0	--- U	02/25/10 CMF	EPA200.8
Silver, ug/l	0.04	10.0	0.1 J	02/25/10 CMF	EPA200.8
Zinc, ug/l	0.14	10.0	5.9 J	02/25/10 CMF	EPA200.8
Turbidity, NTU	1.0	1.0	45	02/18/10 JIJ	SM2130B
Conductivity (at 25c), uMhos	1.0	1.0	21	02/18/10 RJH	SM2510B
Temperature, °C			13	02/18/10 RJH	SM2550B
Static Water Level, feet			17.19	02/18/10 RJH	
Well Depth, feet			26.81	02/18/10 RJH	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.



P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6042 A

HALIFAX CO. (COAL ASH LANDFILL)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 02/16/10  
DATE REPORTED : 03/02/10

REVIEWED BY: 

PARAMETERS	MDL	SW-1		Basin #1	Analysis		Method
		SWSL			Date	Analyst	
PH (field measurement), Units			6.5	6.8	02/16/10	RJH	SM4500HB
Total Organic Carbon, mg/l	0.15	1.0	2.41	---	02/18/10	SEJ	SM5310C
Chloride, mg/l	5.0	5.0	6	910	02/21/10	JIJ	SM4500-CLB
Sulfate, mg/l	5.0	250.0	13.5 J	1428.4	02/22/10	TRB	SM426C
Arsenic, ug/l	0.17	10.0	0.6 J	15	02/23/10	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	18.1 J	50.6 J	02/23/10	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	---	0.1 J	02/23/10	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	0.5 J	1.3 J	02/23/10	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	---	5.5 J	02/23/10	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.1 J	---	02/23/10	LFJ	EPA200.8
Mercury, ug/l	0.13	0.20	---		02/23/10	LFJ	EPA200.8
Mercury, ug/l	0.13	0.20		1.1	02/25/10	ADD	EPA245.1
Selenium, ug/l	0.12	10.0	0.5 J	101	02/23/10	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	0.1 J	0.1 J	02/23/10	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	1.8 J	18	02/23/10	LFJ	EPA200.8
Turbidity, NTU	1.0	1.0	4.6	1.8	02/16/10	JIJ	SM2130B
Conductivity (at 25c), uMhos	1.0	1.0	89	4108	02/16/10	RJH	SM2510B
Temperature, °C			5	7	02/16/10	RJH	SM2550B





REC'D MAR 03 2010

Ms. Dee Dee Woolard  
Environment 1, Inc.  
P.O. Box 7085  
Greenville NC 27835-7085

Report Number: G239-1005

Client Project: 6042A Halifax Co. (Coal Ash Landfill)

Dear Ms. Woolard:

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 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 SGS at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,  
SGS Environmental Services, Inc.

for: Barbara Hager      3.1.2010  
Project Manager      Date  
Lori Lockamy

SGS North America, Inc.  
List of Reporting Abbreviations  
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

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/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

UJ = Target analytes with recoveries that are  $10\% < \%R < LCL$ ; # of MEs are allowable and compounds are not detected in the sample.

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:

- 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.

SGS North America, Inc.

Results for Metals

Client Sample ID: Sediment Sample #1  
 Client Project ID: 6042A Halifax Co. (Coal Ash Landfill)  
 Lab Sample ID: G239-1005-3  
 Lab Project ID: G239-1005  
 ICP InitWt/Vol: 5 mL Final Vol: 50 mL  
 Hg InitWt/Vol: 20 mL Final Vol: 57 mL  
 Prep Batch: 16105 16114

Analyzed By: PSW CRN  
 Date Collected: 2/16/2010 10:40  
 Date Received: 2/19/2010  
 Matrix: Leachate

Metals	Result	RL	DF	Units	Method	Date Analyzed
<b>TCLP</b>						
Arsenic	BQL	0.200	1	MG/L	6010C	2/25/2010
Cadmium	BQL	0.100	1	MG/L	6010C	2/25/2010
Chromium	BQL	0.100	1	MG/L	6010C	2/25/2010
Lead	BQL	0.100	1	MG/L	6010C	2/25/2010
Mercury	BQL	0.000570	1	MG/L	7470	2/24/2010
Selenium	BQL	0.200	1	MG/L	6010C	2/25/2010
Silver	BQL	0.100	1	MG/L	6010C	2/25/2010

**Comments**

BQL = Below Quantitation Limits  
 DF = Dilution Factor  
 J = Between MDL and RL  
 B= Amount in Prep Blank > MDL

Reviewed By:   
 METALS.XLS

SGS North America, Inc.

Results for Metals

Client Sample ID:	Sediment Sample #2	Analyzed By:	PSW CRN
Client Project ID:	6042A Halifax Co. (Coal Ash Landfill)	Date Collected:	2/16/2010 10:55
Lab Sample ID:	G239-1005-4	Date Received:	2/19/2010
Lab Project ID:	G239-1005	Matrix:	Leachate
ICP InitWt/Vol:	5 mL	Final Vol:	50 mL
Hg InitWt/Vol:	20 mL	Final Vol:	57 mL
Prep Batch:	16105 16114		

Metals	Result	RL	DF	Units	Method	Date Analyzed
TCLP						
Arsenic	BQL	0.200	1	MG/L	6010C	2/25/2010
Cadmium	BQL	0.100	1	MG/L	6010C	2/25/2010
Chromium	BQL	0.100	1	MG/L	6010C	2/25/2010
Lead	BQL	0.100	1	MG/L	6010C	2/25/2010
Mercury	BQL	0.000570	1	MG/L	7470	2/24/2010
Selenium	BQL	0.200	1	MG/L	6010C	2/25/2010
Silver	BQL	0.100	1	MG/L	6010C	2/25/2010

Comments

BQL = Below Quantitation Limits  
 DF = Dilution Factor  
 J = Between MDL and RL  
 B= Amount in Prep Blank > MDL

Reviewed By:   
 METALS.XLS

Environment 1, Inc.  
 P.O. Box 7085, 114 Oakmont Dr.  
 Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CLIENT: 6042 A / Week: 6

*Project name / #*  
 HALIFAX CO. (COAL ASH LANDFILL)  
 MS. GWEN MATTHEWS  
 P.O. BOX 70  
 HALIFAX NC 27839

(252) 583-1807

# CHAIN OF CUSTODY RECORD G239-1005

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l	TEMPERATURE, °C	# OF CONTAINERS	Field pH	FOC	Chloride	Sulfate	Metals	Hardness	Conductivity	Temperature	TCLP Metals	PARAMETERS	CHEMICAL PRESERVATION	CONTAINER TYPE, P/G	PH CHECK (LAB)	CHLORINE NEUTRALIZED AT COLLECTION
	DATE	TIME																	
<del>SW-1</del>	<del>02/16/10</del>	<del>10:05</del>	<del>5</del>	<del>5</del>	<del>6</del>	<del>7.5</del>	<del>0.5</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>None</del>	<del>P</del>	<del>P</del>	<del>P</del>	<del>G</del>
<del>Basin #1</del>	<del>02/16/10</del>	<del>10:40</del>	<del>7</del>	<del>7</del>	<del>6</del>	<del>7.5</del>	<del>0.5</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>100</del>	<del>None</del>	<del>P</del>	<del>P</del>	<del>P</del>	<del>G</del>
Sediment Sample #1	02/16/10	10:40		1															
Sediment Sample #2	02/16/10	10:55		1															
SGS North America																			
RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
<i>Bob Nace</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10	<i>[Signature]</i>	2/16/10
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10	<i>[Signature]</i>	02/16/10

CLASSIFICATION:  
 WASTEWATER (NPDES)  
 DRINKING WATER  
 DWQGW  
 SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY  
 Y  N

SAMPLES COLLECTED BY:  
 (Please Print) *Hogeel Fof*

SAMPLES RECEIVED IN LAB AT *0.2°C*

COMMENTS:

PLEASE READ Instructions for completing this form on the reverse side.

FORM #5

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

No 199040