

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)(a)(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):

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 122  
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 County Coal Ash Landfill	S.R. 1417 Aurelian Springs, NC	42-04	.0500	August 20, 2009

**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 Senior Hydrogeologist 919-828-0577  
 Facility Representative Name (Print) Title (Area Code) Telephone Number

Joan A. Smyth 10/7/09  
 Signature Date

Affix NC Licensed Professional Geologist Seal



14 N. Boylan Avenue Raleigh, NC 27603  
 Facility Representative Address  
C0828  
 NC PE Firm License Number (if applicable effective May 1, 2009)

**Halifax County Coal Ash Landfill**

**Ground Water Monitoring Report**

**August 2009 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

**October 2009**

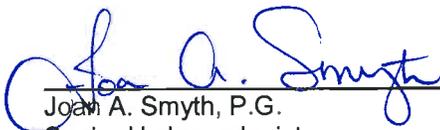


**Ground Water Monitoring Report  
Halifax County Coal Ash Landfill  
August 2009 Semi - Annual Report**

Prepared for:

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

RSG Project No. **Halifax - 8**

  
Joan A. Smyth, P.G.  
Senior Hydrogeologist

10/7/09



**October 2009**



PRINTED ON 100% RECYCLED PAPER

**Halifax County Coal Ash Landfill**

**Semi-annual Ground Water Monitoring Report  
August 2009 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 second semi-annual monitoring event for 2009, conducted on August 20, 2009. 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 five ground water wells (MW-9, MW-10, MW-11, MW-12, and MW-17), shown in **Figure 1**. Samples were not taken from MW-8 and Basin#1 as both the well and the basin were dry. 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

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

locally dip gently eastward as a result of regional metamorphism and folding which produced a 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**.

Three (3) inorganic constituents; cadmium (MW-17), copper (MW-17) and zinc (MW-11 & MW-17) shown in **Table 2**, were 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**. No constituents were detected in sediment samples collected upstream and downstream of the sedimentation basin discharge point.

## **5.0 Ground Water Characterization**

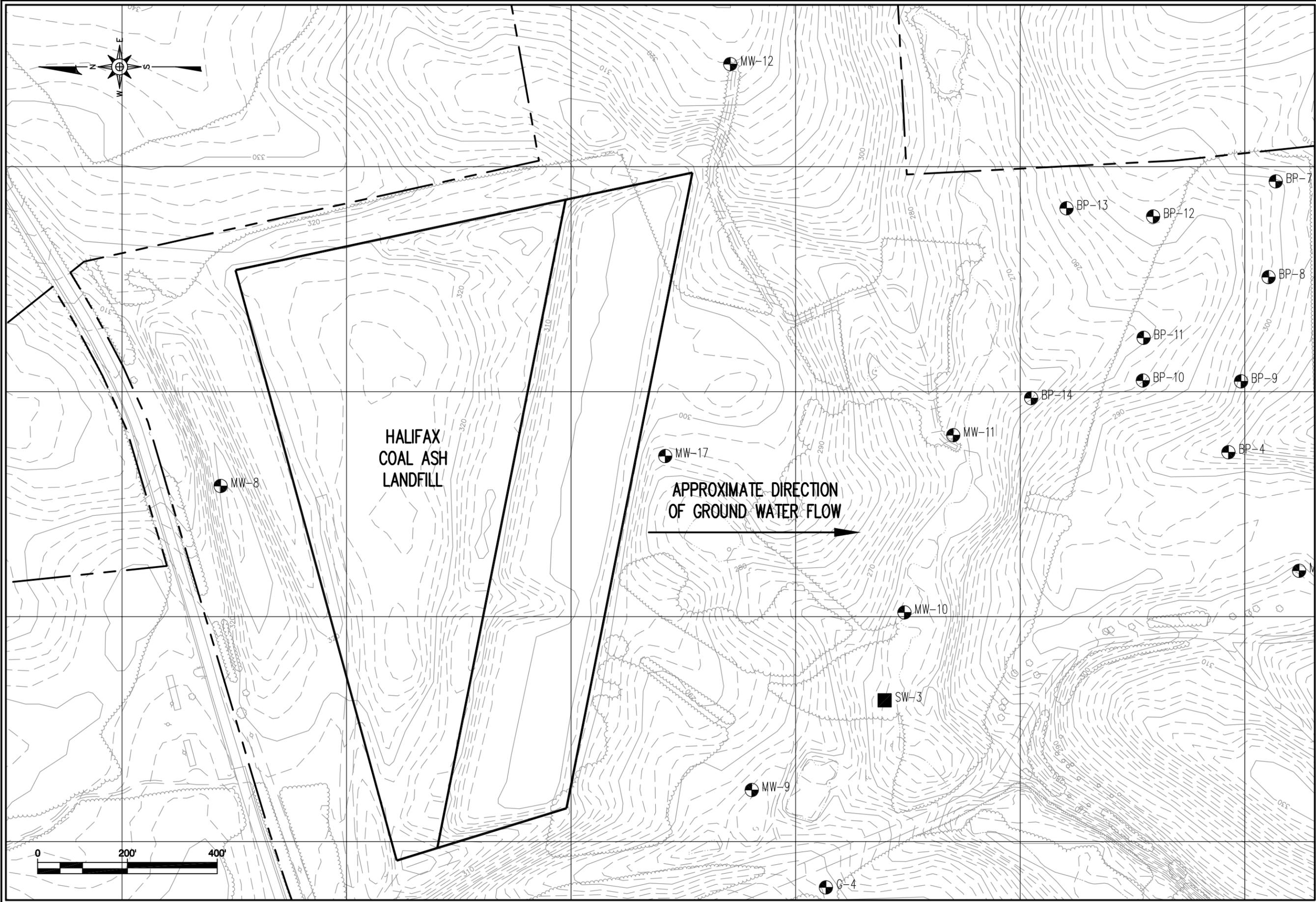
The depth to water data indicates that ground water is flowing generally to the east towards the unnamed tributary to Brewer's Creek. This is consistent with ground water flow patterns previously detected for the site. The ground water flow map is attached as **Figure 1**.

## **6.0 Conclusions**

A review of constituent data indicates no ground water impact at the site. Three (3) inorganic constituents were detected in wells MW-11 & MW-17 at concentrations below the 2L groundwater standards. These detections are likely due to the elevated turbidity as these constituents naturally occur in soils in this area. The next semi-annual event is scheduled for February 2010. A report will be submitted upon receipt of the results of that sampling event.

Figures

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**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**  
**8/20/2009**

Monitoring Location	pH (std units)	Static Water Level (feet)	Specific Conductivity (umhos/cm)	Temperature (degrees C)	Turbidity (NTU)
MW-8	nm	nm	nm	nm	nm
MW-9	5.1	13.97	36	--	950
MW-10	5.3	4.5	40	19	6.1
MW-11	6.1	5.68	101	18	150
MW-12	4.6	45.28	30	17	3.9
MW-17	5.1	21.23	37	18	95
SW-1	6.7	nm	115	23	65.0
Sed Basin 1	nm	nm	nm	nm	nm

nm - Not Measured



By: KBS  
Date: 10/1/2009

**Table 2**  
**Halifax County Coal Ash Landfill**  
**Detected Inorganic Constituents**  
**08/20/09**

Monitoring Location	SWSL*	2L GW Standard	MW-8	MW-9	MW-10	MW-11	MW-12	MW-17	Sed Basin 1
Arsenic	10	50	nm	0.5 J	0.2 J	0.9 J	ND	ND	nm
Barium	100	2000	nm	19.4 J	24.3 J	35.2 J	24.5 J	88.1 J	nm
Cadmium	1	1.75	nm	0.1 J	0.1 J	0.1 J	0.1 J	<b>1</b>	nm
Chromium, total	10	50	nm	ND	ND	0.9 J	0.5 J	2.7 J	nm
Copper	10	1000	nm	0.9 J	0.5 J	5.2 J	2.2 J	<b>13</b>	nm
Lead	10	15	nm	0.1 J	0.4 J	1.3 J	0.5 J	1.9 J	nm
Mercury	0.2	1.05	nm	0.06 J	0.04 J	ND	ND	ND	nm
Selenium	10	50	nm	0.9 J	ND	0.2 J	0.2 J	0.2 J	nm
Silver	10	17.5	nm	ND	ND	0.1 J	ND	ND	nm
Zinc	10	1050	nm	2.6 J	2.4 J	<b>15</b>	8.1 J	<b>23</b>	nm

Monitoring Location	SWSL*	Surface Water Standard	SW-1	Sediment #1 Upstream	Sediment #2 Downstream
Arsenic	200	50	0.9 J	ND	ND
Barium	5000	-	25.7 J	ND	ND
Cadmium	100	2	0.1 J	ND	ND
Chromium, total	100	50	0.5 J	ND	ND
Lead	100	25	0.8 J	ND	ND
Mercury	0.57	0.012	0.9 J	ND	ND
Selenium	200	5	ND	ND	ND
Silver	100	0.06	ND	ND	ND
Zinc	10	-	3.8 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

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)  
MR. FRANK RALPH  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/20/09  
DATE REPORTED : 09/09/09

REVIEWED BY: 

PARAMETERS	MDL	Well SWSL	Well	Well	Well	Well	Well	Analysis		Method		
			#8	#9	#10	#11	#12	Date	Analyst	Code		
PH (field measurement), Units		Missing	5.1	5.3	6.1	4.6	08/20/09	RJH	SM4500HB			
Total Organic Carbon, mg/l	0.15	1.0 Missing	1.06	---	U	---	U	08/25/09	SEJ	SM5310C		
Chloride, mg/l	5.0	5.0 Missing	---	U	---	U	5	08/25/09	MJN	SM4500-CLB		
Sulfate, mg/l	5.0	250.0 Missing	20.7 J	10.2 J	10.6 J	10.4 J	08/26/09	TRB	SM4500-SO4			
Arsenic, ug/l	0.17	10.0 Missing	0.5 J	0.2 J	0.9 J	---	U	09/03/09	LFJ	EPA200.8		
Barium, ug/l	0.04	100.0 Missing	19.4 J	24.3 J	35.2 J	24.5 J	09/03/09	LFJ	EPA200.8			
Cadmium, ug/l	0.04	1.0 Missing	0.1 J	0.1 J	0.1 J	0.1 J	09/03/09	LFJ	EPA200.8			
Copper, ug/l	0.04	10.0 Missing	0.9 J	0.5 J	5.2 J	2.2 J	09/03/09	LFJ	EPA200.8			
Total Chromium, ug/l	0.10	10.0 Missing	---	U	---	U	0.9 J	0.5 J	09/03/09	LFJ	EPA200.8	
Lead, ug/l	0.04	10.0 Missing	0.1 J	0.4 J	1.3 J	0.5 J	09/03/09	LFJ	EPA200.8			
Mercury, ug/l	0.03	0.20 Missing	0.06 J	0.04 J	---	U	---	U	09/03/09	LFJ	EPA200.8	
Selenium, ug/l	0.12	10.0 Missing	0.9 J	---	U	0.2 J	0.2 J	09/03/09	LFJ	EPA200.8		
Silver, ug/l	0.04	10.0 Missing	---	U	---	U	0.1 J	---	U	09/03/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0 Missing	2.6 J	2.4 J	15	8.1 J	09/03/09	LFJ	EPA200.8			
Turbidity, NTU	1.0	1.0 Missing	950	6.1	150	3.9	08/20/09	MJN	SM2130B			
Conductivity (at 25c), uMhos	1.0	1.0 Missing	36	40	101	30	08/20/09	RJH	SM2510B			
Temperature, °C		Missing	20	19	18	17	08/20/09	RJH	SM2550B			
Static Water Level, feet		Missing	13.97	4.50	5.68	45.28	08/20/09	RJH				
Well Depth, feet		Missing	24.97	16.22	21.71	51.02	08/20/09	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)  
MR. FRANK RALPH  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/20/09

DATE REPORTED : 09/09/09

REVIEWED BY: 

PARAMETERS	MDL	SWSL	Well	Analysis		Method
			#17	Date	Analyst	Code
PH (field measurement), Units			5.1	08/20/09	RJH	SM4500HB
Total Organic Carbon, mg/l	0.15	1.0	--- U	08/25/09	SEJ	SM5310C
Chloride, mg/l	5.0	5.0	--- U	08/25/09	MJN	SM4500-CLB
Sulfate, mg/l	5.0	250.0	11.9 J	08/26/09	TRB	SM4500-SO4E
Arsenic, ug/l	0.17	10.0	--- U	09/03/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	88.1 J	09/03/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	1	09/03/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	13	09/03/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	2.7 J	09/03/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	1.9 J	09/03/09	LFJ	EPA200.8
Mercury, ug/l	0.03	0.20	--- U	09/03/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	0.2 J	09/03/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	09/03/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	23	09/03/09	LFJ	EPA200.8
Turbidity, NTU	1.0	1.0	95	08/20/09	MJN	SM2130B
Conductivity (at 25c), uMhos	1.0	1.0	37	08/20/09	RJH	SM2510B
Temperature, °C			18	08/20/09	RJH	SM2550B
Static Water Level, feet			21.23	08/20/09	RJH	
Well Depth, feet			26.81	08/20/09	RJH	

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

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

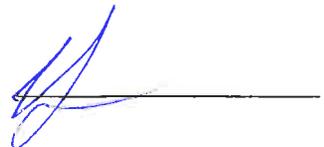
P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

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

ID#: 6042 A

HALIFAX CO. (COAL ASH LANDFILL)  
MR. FRANK RALPH  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/18/09  
DATE REPORTED : 08/31/09

REVIEWED BY: 

PARAMETERS	MDL	SW-1		Basin #1	Analysis		Method Code
		SWSL			Date	Analyst	
PH (field measurement), Units			6.7	Missing	08/18/09	RJH	SM4500HB
Total Organic Carbon, mg/l	0.15	1.0	1.80	Missing	08/25/09	SEJ	SM5310C
Chloride, mg/l	5.0	5.0	6	Missing	08/21/09	MJN	SM4500-CLB
Sulfate, mg/l	5.0	250.0	10.5 J	Missing	08/26/09	TRB	SM4500-SO4E
Arsenic, ug/l	0.17	10.0	0.9 J	Missing	08/21/09	CMF	EPA200.8
Barium, ug/l	0.04	100.0	25.7 J	Missing	08/21/09	CMF	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	Missing	08/21/09	CMF	EPA200.8
Copper, ug/l	0.04	10.0	0.8 J	Missing	08/21/09	CMF	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.5 J	Missing	08/21/09	CMF	EPA200.8
Lead, ug/l	0.04	10.0	0.9 J	Missing	08/21/09	CMF	EPA200.8
Mercury, ug/l	0.03	0.20	--- U	Missing	08/21/09	CMF	EPA200.8
Selenium, ug/l	0.12	10.0	--- U	Missing	08/21/09	CMF	EPA200.8
Silver, ug/l	0.04	10.0	--- U	Missing	08/21/09	CMF	EPA200.8
Zinc, ug/l	0.14	10.0	3.8 J	Missing	08/21/09	CMF	EPA200.8
Turbidity, NTU	1.0	1.0	65	Missing	08/18/09	MJN	SM2130B
Conductivity (at 25c), uMhos	1.0	1.0	115	Missing	08/18/09	RJH	SM2510B
Temperature, °C			23	Missing	08/18/09	RJH	SM2550B

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



Print Date: 8/31/2009

Client Sample ID: **Sediment Sample #1**  
Client Project ID: 6042A Halifax Co. (Coal Ash Landfill)  
Lab Sample ID: G239-916-3  
Lab Project ID: G239-916

Collection Date: 18-Aug-09 0:00  
Received Date: 21-Aug-09  
Matrix: LEACHATE

**Results by 6010B TCLP**

<u>Parameter</u>	<u>Result</u>	<u>RL/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Arsenic	BQL	0.200	MG/L	1	28-Aug-09 0:00
Barium	BQL	5.00	MG/L	1	28-Aug-09 0:00
Cadmium	BQL	0.100	MG/L	1	28-Aug-09 0:00
Chromium	BQL	0.100	MG/L	1	28-Aug-09 0:00
Lead	BQL	0.100	MG/L	1	28-Aug-09 0:00
Selenium	BQL	0.200	MG/L	1	28-Aug-09 0:00
Silver	BQL	0.100	MG/L	1	28-Aug-09 0:00

**Batch Information**

Analytical Batch: 082809a.csv  
Analytical Method: 6010B  
Instrument: ICP  
Analyst: PSW

Prep Batch: 15004  
Prep Method: 3010  
Prep Date/Time: 28-Aug-09 11:45  
Initial Prep Wt./Vol.: 5.00  
Prep Extract Vol: 50



Print Date: 8/31/2009

Client Sample ID: **Sediment Sample #1**  
Client Project ID: 6042A Halifax Co. (Coal Ash Landfill)  
Lab Sample ID: G239-916-3  
Lab Project ID: G239-916

Collection Date: 18-Aug-09 0:00  
Received Date: 21-Aug-09  
Matrix: LEACHATE

**Results by 7470 TCLP**

<u>Parameter</u>	<u>Result</u>	<u>RL/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Mercury	BQL	0.000570	MG/L	1	28-Aug-09 0:00

**Batch Information**

Analytical Batch: 082809A.CSV  
Analytical Method: 7470  
Instrument: HG1  
Analyst: PSW

Prep Batch: 15001  
Prep Method: 7470  
Prep Date/Time: 28-Aug-09 11:45  
Initial Prep Wt./Vol.: 20.00  
Prep Extract Vol: 57



Print Date: 8/31/2009

Client Sample ID: **Sediment Sample #2**  
Client Project ID: 6042A Halifax Co. (Coal Ash Landfill)  
Lab Sample ID: G239-916-4  
Lab Project ID: G239-916

Collection Date: 12-Aug-09 0:00  
Received Date: 21-Aug-09  
Matrix: LEACHATE

**Results by 6010B TCLP**

<u>Parameter</u>	<u>Result</u>	<u>RL/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Arsenic	BQL	0.200	MG/L	1	28-Aug-09 0:00
Barium	BQL	5.00	MG/L	1	28-Aug-09 0:00
Cadmium	BQL	0.100	MG/L	1	28-Aug-09 0:00
Chromium	BQL	0.100	MG/L	1	28-Aug-09 0:00
Lead	BQL	0.100	MG/L	1	28-Aug-09 0:00
Selenium	BQL	0.200	MG/L	1	28-Aug-09 0:00
Silver	BQL	0.100	MG/L	1	28-Aug-09 0:00

**Batch Information**

Analytical Batch: 082809a.csv  
Analytical Method: 6010B  
Instrument: ICP  
Analyst: PSW

Prep Batch: 15004  
Prep Method: 3010  
Prep Date/Time: 28-Aug-09 11:45  
Initial Prep Wt./Vol.: 5.00  
Prep Extract Vol: 50



Print Date: 8/31/2009

Client Sample ID: **Sediment Sample #2**  
Client Project ID: 6042A Halifax Co. (Coal Ash Landfill)  
Lab Sample ID: G239-916-4  
Lab Project ID: G239-916

Collection Date: 12-Aug-09 0:00  
Received Date: 21-Aug-09  
Matrix: LEACHATE

**Results by 7470 TCLP**

<u>Parameter</u>	<u>Result</u>	<u>RL/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Mercury	BQL	0.000570	MG/L	1	28-Aug-09 0:00

**Batch Information**

Analytical Batch: 082809A.CSV  
Analytical Method: 7470  
Instrument: HG1  
Analyst: PSW

Prep Batch: 15001  
Prep Method: 7470  
Prep Date/Time: 28-Aug-09 11:45  
Initial Prep Wt./Vol.: 20.00  
Prep Extract Vol: 57

## List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation 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

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.



# CHAIN OF CUSTODY RECORD

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: 33

HALIFAX CO. (COAL ASH LANDFILL)  
 MR. FRANK RALPH  
 P.O. BOX 70  
 HALIFAX NC 27839

(252) 583-1807

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l	TEMPERATURE, °C	# OF CONTAINERS	DISINFECTION										CHLORINE NEUTRALIZED AT COLLECTION	
	DATE	TIME				AT COLLECTION	AT COLLECTION	CHLORINE	UV	NONE	Field pH	TOC	Chloride	Sulfate	Metals		Turbidity
SW-1	08/18/09	0930	23	6	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P	P	P	P	G	
Basin #1				6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	C	A	A	A	A	A	A	
Sediment Sample #1	8/18			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Sediment Sample #2	8/18			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
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