DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

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)(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):

Smith Gardner, Inc.

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

Name: Madeline German, PG Phone: 919-828-0577 x 222

E-mail: madeline@smithgardnerinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Halifax Coal Ash Landfill	921 Liles Rd, Aurelian Springs, NC	42-04	.0500	August 4-5, 2014

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
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

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.

Madeline German, PG — Geologist — 919-828-0577 x 222

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Signature — Date: 9/22/14

Affix NC Licensed/Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 2275 9/22/14 GEOLOGIST MADELINE GERMAN

14 N. Boylan Avenue, Raleigh, NC 27603

Facility Representative Address

C0828

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

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August 2014 Semi-Annual Groundwater Monitoring Report

Halifax County Coal Ash Landfill
NC Solid Waste Permit #42-04

Prepared for:

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

September 2014

Prepared by:

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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August 2014 Groundwater Monitoring Report

Halifax County Coal Ash Landfill
NC Solid Waste Permit #42-04

Prepared For:
Halifax County
Halifax, North Carolina

S+G Project No. Halifax-8

NORTH CAROLINA LICENSED SEAL 2275 GEOLOGIST MADELINE GERMAN 9/22/14

Madeline German, PG
Project Geologist

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

Joan Smyth, PG
Senior Hydrogeologist

9/22/14

September 2014

SMITH+GARDNER

14 N. Boylan Avenue. Raleigh NC 27603 | 919.828.0577

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Halifax County Coal Ash Landfill
NC Solid Waste Permit #42-04

August 2014 Semi-Annual Groundwater Monitoring Report

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1.0 INTRODUCTION

Smith Gardner, Inc (S+G) is pleased to submit this semi-annual sampling report on behalf of the Halifax County Lined Coal Ash Landfill, operating under Solid Waste Permit #42-04, in accordance with Solid Waste Section Rule 15A NCAC 13B. This report presents semi-annual monitoring results for the event performed August 5, 2014.

The Halifax County Lined Coal Ash Landfill is a monofill landfill that only accepts coal ash from power generation. The groundwater monitoring network includes six wells located around the landfill perimeter, a 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. This report includes a field procedure summary, laboratory analyses, summary tables and groundwater characterization.

2.0 SITE HYDROGEOLOGY

The *1985 North Carolina Geological Map* and *Groundwater in the Halifax Area, North Carolina* (Dept. of Conservation and Development Bulletin #51, 1946) indicates the Halifax County Lined Coal Ash Landfill is situated on the eastern edge of the Eastern Piedmont Physiographic Province, 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. Eastern piedmont rocks exhibit a northeast strike and locally dip gently eastward as a result of regional metamorphism and folding that 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 groundwater generally range from near surface in lowland areas along Brewer's Creek and its tributary to around 45 ft. below grade in the MW-12 area. Groundwater generally flows to the south.

3.0 SAMPLING LOCATIONS AND PROCEDURES

The sampling event, performed by Environment 1, Inc., on February 24, 2014 was conducted in accordance with the approved site Water Quality Monitoring Plan[1]. Sampling methods followed the protocol outlined in the Solid Waste Section Guidelines for Groundwater, Soil and Surface Water Sampling[2]. The depth to water in each well was gauged prior to purging and sampling. Field measurements for pH, specific conductivity, turbidity and temperature were recorded at each well.

1 Halifax County Landfill, Water Quality Monitoring Plan, November 2012 by Smith Gardner, Inc.
2 Solid Waste Section Guidelines for Groundwater, Soil and surface Water Sampling, NCDENR, DWM, April 2008.

The monitoring network at the Halifax Coal Ash Landfill currently includes six groundwater wells (MW-8, MW-9, MW-10, MW-11, MW-12 and MW-17), a surface water location (SW-3[3]) one sample collected from Sediment Basin 1 (Basin 1) and two sediment samples collected upstream and downstream of the sedimentation basin discharge point (Sediment 1 and Sediment 2). Sampling location details are presented in **Table 1**.

Samples were collected by Environment 1, Inc. personnel in laboratory prepared containers for the specified analytical procedures. Groundwater samples were properly preserved, placed on ice and transported to the laboratory facility within the specified hold times for each analysis.

Sampling locations are shown on **Figure 1**.

4.0 FIELD AND LABORATORY RESULTS

4.1 Field Results

Temperature, pH, turbidity and specific conductance were measured in the field prior to sampling via direct read instruments. The field parameter results are summarized in **Table 2** and have remained consistent with previously reported sampling events.

4.2 Laboratory Analysis

The samples were transported under proper chain of custody, in a cooler with ice to Environment 1, Inc., a North Carolina certified laboratory (NC Wastewater ID #10) located in Greenville, NC. Ground and surface water samples were analyzed for Appendix I metals plus mercury, total organic carbon (TOC), chloride and sulfate via the test methods specified in the laboratory report. Sediment samples were analyzed by Summit Environmental Technologies, Inc (NC Certification ID #39705 and #631) located in Cuyahoga Falls, OH. Samples were analyzed for specific metals detailed in the laboratory report using approved TCLP methods. Parameters were reported at NC Solid Waste Section Practical Quantitation Limits (SWSLs).

The laboratory analytical report is included as **Appendix A.**

4.3 Laboratory Results

The laboratory analysis were compared with the 15A NCAC 2L 0200 Groundwater Standard (2L Standard) and SWSL. Inorganic results remain generally consistent with historically reported detections. Cadmium (MW-17) and zinc (MW-11 and, MW-12) were detected at or above their SWSL. No metals were detected above their 2L Standards in monitoring well samples. Most inorganic concentrations were reported as "J-qualified" indicating they are a non-quantifiable value that falls between the method limit and the SWSL. Turbidity levels for MW-11 and MW-12 were high for this event; reported at 100 and 73 nephelometric turbidity units (NTU) respectively. High turbidity levels, indicating

3 The SW-3 location has been erroneously refferd to as SW-1 in past semi-annual groundwater reports.

increased sediment in the samples, may have contributed to elevated metal concentrations for this event.

No constituents were identified in the sample from SW-3 above the 2B Standard.

In Basin #1 selenium and chloride were reported at concentrations above their 2B Standards. This location will be resampled for those constituents and results will be submitted to NCDENR.

There were no detections in the sediment samples (upstream and downstream).

Detected inorganic constituents from ground or surface water samples are presented in **Table 3**. Sediment sample results are shown in **Table 4.**

5.0 GROUNDWATER CHARACTERIZATION

The depth to water data indicates that groundwater is flowing generally south towards the unnamed tributary to Brewer's Creek; which is consistent with historic groundwater flow patterns. Average groundwater velocity for the site is 0.0084 ft/day. The groundwater flow map is included as **Figure 1**.

6.0 CONCLUSIONS

Current and historic analytical data indicate no groundwater impact at this site. Detected metals are likely from increased turbidity levels and natural occurrence in North Carolina soils. The next semi-annual event is scheduled for February 2015. An event report will be submitted to NCDENR following receipt and review of sampling results.

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FIGURES

August 2014 - Groundwater Monitoring Report
Halifax County Coal Ash Landfill
NC Solid Waste Permit #42-04

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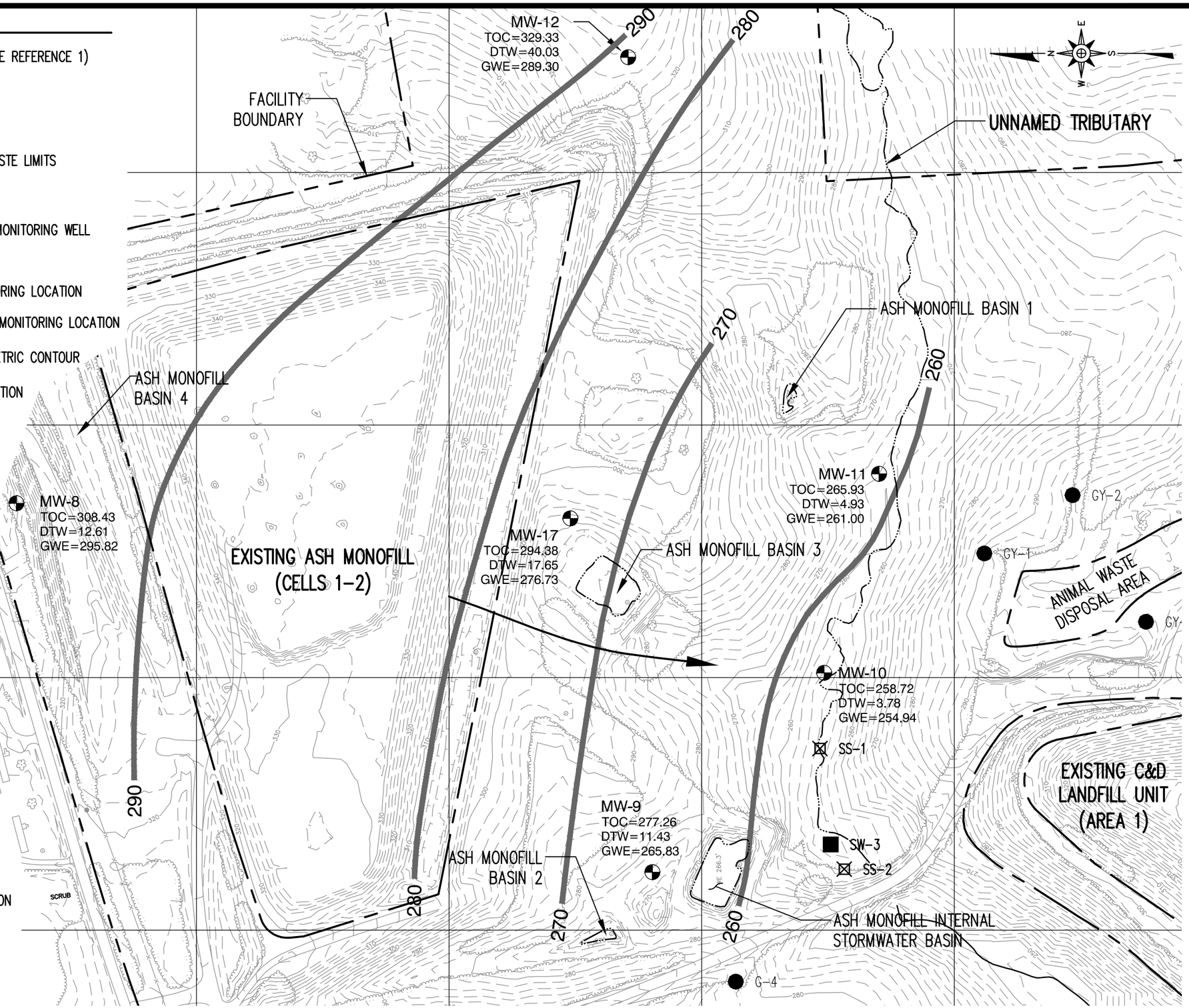
LEGEND

- 200 — EXISTING 10' CONTOUR (SEE REFERENCE 1)
- EXISTING 2' CONTOUR
- STREAM/WATER BODY
- APPROXIMATE EXISTING WASTE LIMITS
- FACILITY BOUNDARY
- MW-10 EXISTING GROUND WATER MONITORING WELL
- GY-2 EXISTING PIEZOMETER
- SS-1 EXISTING SEDIMENT MONITORING LOCATION
- SW-1 EXISTING SURFACE WATER MONITORING LOCATION
- GROUNDWATER POTENTIOMETRIC CONTOUR
- GROUNDWATER FLOW DIRECTION
- TOC TOP OF CASING
- DTW DEPTH TO WATER
- GWE GROUNDWATER ELEVATION



REFERENCE:

1. OVERALL SITE TOPOGRAPHY PROVIDED BY GEODATA CORPORATION, ZEBULON, NC, BASED ON JUNE 16, 2013 AERIAL PHOTOGRAPHY. AND NCDOT GIS DEPARTMENT DATA RELEASE MARCH 2005.

0 200' 400'

© 2014 Smith Gardner, Inc.

G:\CAD\Halifax\Halifax-8\sheets\HALI-B0281.dwg - 8/27/2014 10:46 AM

PREPARED BY:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

PREPARED FOR:

GROUNDWATER POTENTIOMETRIC MAP
HALIFAX COAL ASH LANDFILL
AUGUST 2014

FIGURE NO.	1
FILENAME:	HALI-B0281
SCALE:	AS SHOWN
PROJECT NO:	HALIFAX-8
APPROVED:	M.M.G.
DRAWN:	T.R.S.
DATE:	Aug 2014

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TABLES

August 2014 - Groundwater Monitoring Report
Halifax County Coal Ash Landfill
NC Solid Waste Permit #42-04

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SMITH+GARDNER

By: MG
Date: 8/26/2014

Table 1
Groundwater Elevations Velocities
Halifax County Coal Ash Landfill
August 5, 2014

Monitoring Location	Northing	Easting	TOC Elevation (ft)	Well Depth (ft)	Depth to Water (ft)	Water Table Elevation (ft)	Hydraulic Conductivity (ft/day)	Porosity	Hydraulic Gradient (ft/ft)	Ground Water Velocity (ft/day)
MW-8	959780.42	2350290.39	308.43	23.43	12.61	295.82	0.047	0.2	0.0171	0.0040
MW-9	958597.68	2349614.73	277.26	21.64	11.43	265.83	0.047	0.2	0.0253	0.0059
MW-10	958257.68	2350009.33	258.72	16.16	3.78	254.94	0.047	0.2	0.0595	0.0140
MW-11	958149.07	2350403.19	265.93	21.62	4.93	261.00	0.047	0.2	0.0250	0.0059
MW-12	958645.55	2351227.97	329.33	51.35	40.03	289.30	0.047	0.2	0.0233	0.0055
MW-17	958790.40	2350356.85	294.38	26.89	17.65	276.73	0.047	0.2	0.0641	0.0151

NOTE:
Hydraulic Conductivity averaged from Closed MSW well data
Porosity values assumed from Groundwater & Wells (Driscoll)
Velocity Calculated from V=K*i/n

V = velocity
K = Hydraulic Conductivity
i = Gradient
n = Porosity

SMITH+GARDNER

Table 2
Field Parameters
Halifax County Coal Ash Landfill
August 5, 2014

By: MG
Date: 8/26/2014

Monitoring Location	pH (std units)	Specific Conductivity (umhos/cm)	Temperature degrees C)	Turbididy (NTU)
MW-8	4.5	94	17	12
MW-9	5.0	34	18	12
MW-10	5.2	39	20	19
MW-11	6.2	118	19	100
MW-12	4.6	39	18	73
MW-17	5	25	17	17.5
SW-1	6.4	206	20	4.8
Basin 1	7.1	6970	23	NA

NOTE:
1. NA = Not Available
2. <MDL

Data from 08/22/2014 Environment 1, Incorporated Laboratory Report Client ID#6042.

SMITH+GARDNER

By: MG
Date: 8/26/2014

Table 3
Inorganic Constituents - Groundwater Samples
Halifax County Coal Ash Landfill
August 5, 2014

Monitoring Location	MDL	SWSL	2L Standard	2B Standard	MW-8	MW-9	MW-10	MW-11	MW-12	MW-17	SW-3	Basin #1
Total Organic Carbon	46	NE	NE	NE	1440	<46	<46	<46	<46	<46	2280	<46
Chloride	5000	--	250000	230000	<5000	<5000	<5000	<5000	6000	<5000	6000	**1710000**
Sulfate	5000	250000	250000	NE	14800 J	<5000	16500 J	11400 J	12900 J	<5000	5300 J	1844000
Arsenic	0.10	10	10	10	0.23 J	<0.1	0.23 J	0.87 J	0.45 J	0.28 J	0.49 J	9
Barium	0.12	100	700	2000000	83.1 J	34.3 J	26.3 J	38.7 J	71.5 J	34.8 J	13.2 J	67.8 J
Cadmium	0.04	1	2	2	0.17 J	0.09 J	0.15 J	0.15 J	0.20 J	**1**	<0.04	0.28 J
Chromium, total	0.14	10	10	50	0.38 J	<0.14	<0.14	1.00 J	1.1 J	1.0 J	<0.14	7.6 J
Copper	0.10	10	1000	7	0.79 J	0.42 J	0.37 J	4.9 J	2.4 J	3.5 J	0.22 J	0.82 J
Lead	0.13	10	15	25	2.1 J	0.38 J	0.64 J	1.5 J	2.0 J	0.56 J	<0.13	<0.13
Selenium	0.16	10	20	5	0.65 J	0.39 J	0.52 J	0.55 J	0.80 J	0.55 J	0.7J	**14**
Silver	0.04	10	20	0.06	<0.04	<0.04	<0.04	0.05 J	<0.04	<0.04	<0.04	<0.04
Zinc	0.53	10	1000	50	3.9 J	6.1 J	3.9 J	**17**	**19**	6.4 J	0.80 J	19

NOTE:

MDL	-	Method Detection Limit
SWSL	-	Solid Waste Section Quantitation Limit
2L	-	Groundwater Standard (15A NCAC 2L 0200)
2B	-	NCAC 2B Standard for Class C waters
< MDL	-	Not detected at or above the MDL
Shading	-	Concentration above 2L or 2B Standard
Bold Letters	-	Constituent detected above SWSL
J	-	"J-qualified" reported from laboratory as data between the MDL and SWSL

Results are presented in ug/l.
Data from 08/22/2014 Environment 1, Incorporated Laboratory Report Client ID#6042.

SMITH+GARDNER

By: MG
Date: 8/26/2014

Table 4
Inorganic Constituents - Sediment Samples
Halifax County Coal Ash Landfill
August 5, 2014

Monitoring Location	LOQ/CL	SWSL	Sediment #1 Upstream	Sediment #2 Downstream
Arsenic	500	10	<500	<500
Barium	5000	100	56000	<5000
Cadmium	100	1	<100	<100
Chromium, total	200	10	<200	<200
Lead	500	10	<500	<500
Mercury	2	0.2	<2	<2
Selenium	500	10	<500	<500
Silver	500	10	<500	<500

NOTE:

LOQ/CL	-	Reporting Limit/Control Limit for the parameter recovery result
SWSL	-	Solid Waste Section Quantitation Limit
2L	-	Groundwater Standard (15A NCAC 2L 0200)
< LOQ/CL	-	Not detected at or above the LOQ/CL
Bold Letters	-	Constituent detected above SWSL

Results are from TCLP analysis presented in ug/l unless otherwise noted.
Results from Summit Environmental Technologies, Inc. WO#14080364.

Appendix A

Laboratory Analytical Report

August 2014 - Groundwater Monitoring Report
Halifax County Coal Ash Landfill
NC Solid Waste Permit #42-04

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/04/14
DATE REPORTED : 09/17/14

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	Basin #1	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.4	7.1	08/04/14	BF	4500HB-00
Total Organic Carbon, mg/l	0.046	1.0	2.28	--- U	08/12/14	SEJ	5310C-00
Chloride, mg/l	5.0	5.0	6	1710	08/07/14	LW	4500CLB-97
Sulfate, mg/l	5.0	250.0	5.3 J	1844	08/12/14	TRB	4500SO42E97
Arsenic, ug/l	0.10	10.0	0.49 J		08/12/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	13.2 J	67.8 J	08/12/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	--- U	0.28 J	08/12/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	0.22 J	0.82 J	08/13/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	--- U	7.6 J	08/13/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	--- U	--- U	08/12/14	LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	--- U	--- U	08/08/14	MTM	245.1 R3-94
Selenium, ug/l	0.16	10.0	0.70 J		08/12/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	08/13/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	0.80 J	19	08/12/14	LFJ	EPA200.8
Turbidity, NTU	1.0	1.0	4.8	--- U	08/04/14	LW	2130B-01
Conductivity (at 25c), uMhos/cm	1.0	1.0	206	6970	08/04/14	BF	2510B-97
Temperature, °C			20	23	08/04/14	BF	2550B-00
Arsenic, ug/l	0.10	10.0		9	09/14/14	MEL	3113B-04
Selenium, ug/l	0.20	10.0		14	09/16/14	MEL	3113B-04

THIS IS A CORRECTED COPY OF PREVIOUSLY REPORTED DATA

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

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858
environment1inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6042 A **Week:** 35

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

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	TOC	Chloride	Sulfate	Metals	Turbidity	Conductivity	Temperature	TCLP Metals
CHLORINE NEUTRALIZED AT COLLECTION														
pH CHECK (LAB)							12			12				
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P	G
CHEMICAL PRESERVATION						A	C	A	A	A	A	A	A	A
SW-1	8-4-14	0925			6	G	G	G	G	G	G	G	G	
Basin #1	8-4-14	1005			6	G	G	G	G	G	G	G	G	
Sediment Sample #1	8-4-14	0950			1									G
Sediment Sample #2	8-4-14	1015			1									G

PARAMETERS/TESTS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
G - NA THIOSULFATE

CLASSIFICATION:
☐ WASTEWATER (NPDES)
☐ DRINKING WATER
☐ DWQ/GW
☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: (Y) N

SAMPLES COLLECTED BY: (Please Print) Bobby / Tom

SAMPLES RECEIVED IN LAB AT 0.3 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bobby Tom	8-4-14 2:41	[signature]	8/4/14 2:43
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

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

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

FORM #5

№ 281693

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: 08/05/14
DATE REPORTED : 08/22/14

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #8	Well #9	Well #10	Well #11	Well #12	Analysis Date	Analyst	Method Code
PH (field measurement), Units			4.5	5.0	5.2	6.2	4.6	08/05/14	BF	4500HB-00
Total Organic Carbon, mg/l	0.046	1.0	1.44	--- U	--- U	--- U	--- U	08/12/14	SEJ	5310C-00
Chloride, mg/l	5.0	5.0	--- U	--- U	--- U	--- U	6	08/07/14	LW	4500CLB-9
Sulfate, mg/l	5.0	250.0	14.8 J	--- U	16.5 J	11.4 J	12.9 J	08/12/14	TRB	4500SO42E
Arsenic, ug/l	0.10	10.0	0.23 J	--- U	0.23 J	0.87 J	0.45 J	08/12/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	83.1 J	34.3 J	26.3 J	38.7 J	71.5 J	08/12/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.17 J	0.09 J	0.15 J	0.15 J	0.20 J	08/12/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	0.79 J	0.42 J	0.37 J	4.9 J	2.4 J	08/13/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	0.38 J	--- U	--- U	1.00 J	1.1 J	08/13/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	2.1 J	0.38 J	0.64 J	1.5 J	2.0 J	08/12/14	LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	--- U	--- U	--- U	--- U	--- U	08/08/14	MTM	245.1 R3-
Selenium, ug/l	0.16	10.0	0.65 J	0.39 J	0.52 J	0.55 J	0.80 J	08/12/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	--- U	0.05 J	--- U	08/13/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	3.9 J	6.1 J	3.9 J	17	19	08/12/14	LFJ	EPA200.8
Turbidity, NTU	1.0	1.0	12.0	12.0	19.0	100.0	73.0	08/05/14	KKF	2130B-01
Conductivity (at 25c), uMhos/cm	1.0	1.0	94	34	39	118	39	08/05/14	BF	2510B-97
Temperature, °C			17	18	20	19	18	08/05/14	BF	2550B-00
Static Water Level, feet			12.61	11.43	3.78	4.93	40.03	08/05/14	BF	
Well Depth, feet			23.43	21.64	16.16	21.62	51.35	08/05/14	BF	

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: 08/05/14
DATE REPORTED : 08/22/14

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #17	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.0	08/05/14	BF	4500HB-00
Total Organic Carbon, mg/l	0.046	1.0	--- U	08/12/14	SEJ	5310C-00
Chloride, mg/l	5.0	5.0	--- U	08/07/14	LW	4500CLB-97
Sulfate, mg/l	5.0	250.0	--- U	08/12/14	TRB	4500SO42E97
Arsenic, ug/l	0.10	10.0	0.28 J	08/12/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	34.8 J	08/12/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	1	08/12/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	3.5 J	08/13/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	1.0 J	08/13/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	0.56 J	08/12/14	LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	--- U	08/08/14	MTM	245.1 R3-94
Selenium, ug/l	0.16	10.0	0.55 J	08/12/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	08/13/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	6.4 J	08/12/14	LFJ	EPA200.8
Turbidity, NTU	1.0	1.0	17.5	08/05/14	KKF	2130B-01
Conductivity (at 25c), uMhos/cm	1.0	1.0	25	08/05/14	BF	2510B-97
Temperature, °C			17	08/05/14	BF	2550B-00
Static Water Level, feet			17.65	08/05/14	BF	
Well Depth, feet			26.89	08/05/14	BF	

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

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858
environment1inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6042 **Week: 35**

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

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR Up/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	TOC	Chloride	Sulfate	Metals	Turbidity	Conductivity	Temperature	Field Parameter
CHLORINE NEUTRALIZED AT COLLECTION														
pH CHECK (LAB)							C2			L2				
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P	
CHEMICAL PRESERVATION						A	C	A	A	A	A	A	A	
Well #8	8-5-14	1205		17	6	G	G	G	G	G	G	G	G	G
Well #9	8-5-14	1200		18	6	G	G	G	G	G	G	G	G	G
Well #10	8-5-14	1150		20	6	G	G	G	G	G	G	G	G	G
Well #11	8-5-14	1140		19	6	G	G	G	G	G	G	G	G	G
Well #12	8-5-14	1130		18	6	G	G	G	G	G	G	G	G	G
Well #17	8-5-14	1155		17	6	G	G	G	G	G	G	G	G	G

PARAMETERS/TESTS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
G - NA THIOSULFATE

CLASSIFICATION:
☐ WASTEWATER (NPDES)
☐ DRINKING WATER
☐ DWQ/GW
☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
(Y) N

SAMPLES COLLECTED BY: (Please Print)
Bobby / Tom

SAMPLES RECEIVED IN LAB AT 6.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Tom Beasley	8-5-14 1445	[illegible]	8/5/14 245
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

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

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

№ 281694

FORM #5