

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

Phone: 919-828-0577x222

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)
Bladen Co. Closed MSW Landfill	1522 Mercer Mill Road, Elizabethtown, NC	09-01	.0500	September 4, 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 Methane gas monitoring data
 Groundwater monitoring data from private water supply wells Corrective action data (specify) _____
 Leachate monitoring data
 Surface water monitoring data 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

919-828-0577x222

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature

Date

Affix NC Licensed/ Professional Geologist Seal

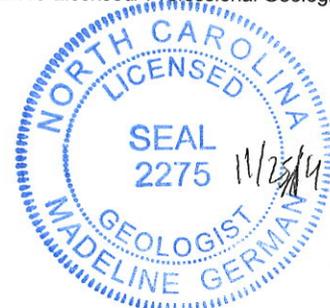
14 N. Boylan Ave, Raleigh, NC 27603

Facility Representative Address

CO828

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

Revised 6/2009



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September 2014 Semi-Annual Groundwater Monitoring Report

Bladen County Closed MSW Landfill NC Solid Waste Permit No. 09-01

Prepared for:

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



November 2014

Prepared by:

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



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September 2014 Groundwater Monitoring Report

Bladen County Closed MSW Landfill Solid Waste Permit No. 09-01

Prepared For:

**Bladen County Solid Waste Management
Elizabethtown, North Carolina**

S+G Project No. Bladen 08-04


Madeline German, P.G.
Project Geologist




Joan A. Smyth, P.G.
Senior Hydrogeologist



November 2014

SMITH + GARDNER

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**Bladen County Closed MSW Landfill
NC Solid Waste Permit No. 09-01**

September 2014 Groundwater Monitoring Report

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FIGURE

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1.0 INTRODUCTION

The Closed unlined Bladen County MSW Landfill, (Solid Waste Permit # 09-01) requires semi-annual groundwater monitoring as a condition of the water quality monitoring program. This report, prepared by Smith Gardner, Inc. (S+G), presents the September 4, 2014 monitoring event results. This event was performed in compliance with NC Solid Waste Regulations.

As specified in rule 15A NCAC 13B .0544 and the November 5, 2014 Groundwater, Surface Water, Soil, Sediment, and Landfill Gas Electronic Document Submittal Memo, this report includes a Solid Waste Section (SWS) Environmental Monitoring Report Form, field procedure and laboratory analyses summaries for the closed MSW site. A potentiometric surface map, summary tables and laboratory analytical report are also included.

2.0 SITE GEOLOGY

The Bladen Co. landfill is located off Highway 87 just east of Elizabethtown in the Coastal Plain physiographic province. According to the *Geologic Map of North Carolina (1985)* this area is underlain by the Black Creek Formation, which is characterized by gray to black lignitic clay with thin beds of fine grained sands and thick lenses of cross-grained sand.

3.0 SAMPLING LOCATIONS

The sampling event was reportedly performed by Environment 1, Incorporated (Greenville, NC) personnel on September 4, 2014. The groundwater monitoring network for the MSW landfill includes seven groundwater monitoring wells (MW-1, MW-3, MW-4, MW-5A, MW-7, MW-8 & MW-9) and two surface water locations (SW-1 & SW-2). MW-7 was unable to be accessed this event therefore it was not sampled. MW-1 serves as the background location. **Figure 1** illustrates sampling locations.

4.0 SAMPLING PROCEDURES

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (NCDENR, DWM). The depth to water in each well was gauged prior to purging and sampling. The field parameters pH, specific conductivity and temperature were measured at each sampling location. Water table elevations are included in **Table 1**.

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

5.0 FIELD AND LABORATORY RESULTS

5.1 Field Parameter Results

Temperature, pH, and specific conductance were measured in the field at the time of sampling. The field parameter results are summarized in **Table 2** and have remained consistent with previously reported sampling events.

5.2 Laboratory Results

Samples were transported to the laboratory facility under proper chain of custody and analyzed at the specified DWM Solid Waste Quantitation Limits (SWSLs)¹ for Appendix I constituents. Water samples were analyzed to the laboratory established Method Detection Limits (MDL). The laboratory report is included as **Appendix A**.

Table 3 summarizes the detected constituent list. Several constituents were detected above the method detection limit at concentrations below the SWSLs. These are listed as “J” values on **Table 3**, indicating they are non-quantifiable values.

5.2.1 Inorganic Constituent Results

This event barium (MW-1, MW-5A and MW-9) and selenium (MW-9) were detected above their SWSL. No inorganics were reported above the NCAC 2L.0200 2L Standard (2L).

5.2.2 Organic Constituent Results

Only vinyl chloride in MW-9 was reported at a concentration above its SWSL and 2L Standard for this event.

5.2.3 Surface Water Results

No quantifiable detections of inorganic or organic constituents were reported in samples from the surface water locations.

6.0 GROUNDWATER CHARACTERIZATION

A potentiometric map (**Figure 1**) for the uppermost aquifer, was prepared from the groundwater elevation data for this sampling event. The data indicates that groundwater is flowing generally north to northwest across most of the site. Hydraulic conductivity data is not available for these wells so groundwater velocities could not be calculated.

¹ New Guidelines for Electronic Submittal of Environmental Monitoring Data Memo, NCDENR – Solid Waste Section, October 27, 2006

7.0 CONCLUSIONS

The reported barium and selenium concentrations are likely due to natural deposit erosion and suspended solids in the sample. The reported organic detections are consistent with historically reported detections in MW-9. Monitoring well MW-9 is located immediately adjacent to the waste at the site.

Surface water sampling did not indicate contaminant migration.

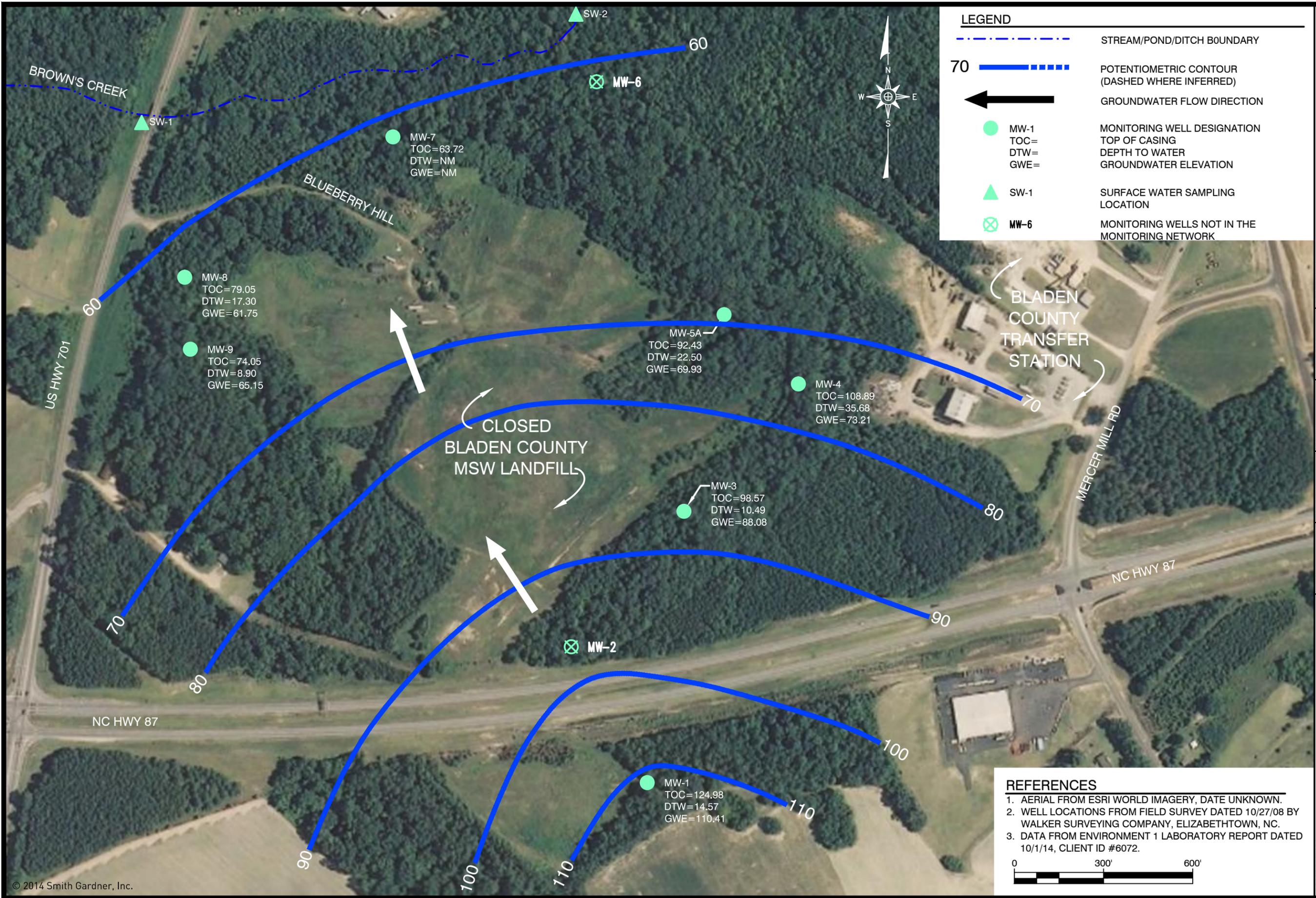
The next groundwater monitoring event is scheduled for March 2015. Following receipt of laboratory data a report will be prepared and submitted to NCDENR and Bladen County.

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FIGURES

**September 2014 Groundwater Monitoring Report
Bladen County Closed MSW Landfill
NC Solid Waste Permit No. 09-01**

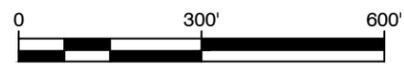
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LEGEND

- STREAM/POND/DITCH BOUNDARY
- POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- MW-1
TOC=
DTW=
GWE=
- SW-1
SURFACE WATER SAMPLING LOCATION
- MW-6
MONITORING WELLS NOT IN THE MONITORING NETWORK

- REFERENCES**
1. AERIAL FROM ESRI WORLD IMAGERY, DATE UNKNOWN.
 2. WELL LOCATIONS FROM FIELD SURVEY DATED 10/27/08 BY WALKER SURVEYING COMPANY, ELIZABETHTOWN, NC.
 3. DATA FROM ENVIRONMENT 1 LABORATORY REPORT DATED 10/1/14, CLIENT ID #6072.



PREPARED FOR: **BLADEN COUNTY MSW LANDFILL POTENTIOMETRIC SURFACE MAP**
SEPTEMBER 2014

PREPARED BY: **SMITH+GARDNER**
 NC LIC. NO. C-0828 (ENGINEERING)
 14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

APPROVED:	M.M.G.	SCALE:	AS SHOWN	FIGURE NO.:	1
DRAWN:	K.C.B.	PROJECT NO.:	BLADEN 08-4	FILENAME:	BLADEN-B0037
DATE:	Nov 2014				

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TABLES

**September 2014 Groundwater Monitoring Report
Bladen County Closed MSW Landfill
Solid Waste Permit No. 09-01**

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Table 1
 Groundwater Elevation Data
 Bladen County MSW Landfill
 September 4, 2014

Well	Well Installation Date	Latitude	Longitude	Well Diameter (inches)	Total Well Depth (feet bgs)	Ground Surface Elevation (feet amsl)	TOC Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet)	Screen Interval (feet bgs)	Screen Geology
MW-1	NA	34.60291	78.61027	2.0	41.12	124.52	124.98	14.57	110.41	31-41	NA
MW-3	NA	34.60541	78.60985	2.0	21.52	97.00	98.57	10.49	88.08	11.5-21.5	NA
MW-4	NA	34.60658	78.60856	2.0	44.32	107.34	108.89	35.68	73.21	34.5-44.5	NA
MW-5A	NA	34.60722	78.60939	2.0	31.74	90.35	92.43	22.50	69.93	22-32	NA
MW-8	NA	34.60758	78.61542	2.0	30.00	77.49	79.05	17.30	61.75	20-30	NA
MW-9	NA	34.60692	78.61536	2.0	17.58	72.09	74.05	8.90	65.15	7.5-17.5	NA

Well locations and elevations provided by Walker Surveying Co., Elizabethtown, NC from field survey conducted on 10/27/08.

Total Well Depth and Depth to Water from Environment 1 laboratory report dated 10/01/14, Client ID# 6072.

*Screened interval is assumed to be 10 feet. No well construction data is currently available.

NA-Not Available

Table 2
 Field Parameters
 Bladen County MSW Landfill
 September 4, 2014

Well Identification #	Temperature (°Celsius)	Specific Conductivity (uS/cm)	pH
MW-1	20	266	6.4
MW-3	20	632	6.4
MW-4	20	846	7.2
MW-5A	20	1347	7.0
MW-8	21	489	6.4
MW-9	21	2500	6.6
SW-1	26	169	6.7
SW-2	24	527	7.4

Note: 1. Data from Environment 1 laboratory report dated 10/01/14, Client ID# 6072.
 2. NM = Not Measured

Table 3
 Detected Inorganic and Organic Constituents
 Bladen County MSW Landfill
 September 4, 2014

Constituents	MDL	SWSL	2L	MCL	2B	MW-1	MW-3	MW-4	MW-5A	MW-8	MW-9	SW-1	SW-2
<u>Inorganic Constituents</u>													
Arsenic	0.10	10	10	10	10	0.42 J	4.6 J	0.84 J	<0.10	0.24 J	5.7 J	0.61 J	0.45 J
Barium	0.12	100	700	200	2000000	129	29.8 J	85.1 J	121	65.3 J	100	34.5 J	54.3 J
Cadmium	0.04	1	2	5	2	0.17 J	<0.04	0.09 J	0.14 J	0.1 J	0.11 J	<0.04	<0.04
Total Chromium	0.14	10	10	100	50	0.894 J	0.58 J	3.1 J	0.27 J	0.3 J	2.2 J	0.62 J	0.7 J
Lead	0.13	10	15	15	25	2.5 J	<0.13	3.5 J	<0.13	<0.13	1.2 J	0.27 J	0.37 J
Selenium	0.16	10	20	50	5	1.1 J	0.34 J	0.57 J	0.51 J	0.63 J	16	0.25 J	0.49 J
<u>Organic Constituents</u>													
1,1-Dichloroethane	0.20	5	6	7	20000	<0.2	<0.2	<0.2	<0.2	<0.2	0.4 J	<0.2	<0.2
Benzene	0.24	1	1	5	51	<0.24	0.9 J	<0.24	<0.24	<0.24	0.8 J	<0.24	<0.24
Chlorobenzene	0.30	3	50	100	140	<0.3	<0.3	<0.3	<0.3	<0.3	2.1 J	<0.3	<0.3
Cis-1,2-Dichloroethene	0.25	5	70	70	4.9	<0.25	<0.25	<0.25	<0.25	<0.25	2.6 J	<0.25	<0.25
Vinyl Chloride	0.63	1	0.03	2	2.4	<0.63	<0.63	<0.63	<0.63	<0.63	1.90	<0.63	<0.63

- SWSL - Solid Waste Quantitation Limit
- MDL - Method Detection Limit
- 2L - Groundwater Standards (15A NCAC 2L 0200)
- 2B - NCAC 2B Standard for Class C waters
- Bold** - Concentrations above 2L standard.
- J - Laboratory identified constituents below SWSL limit but above method detection limit.
- <MDL - Constituent not detected above MDL

SWSLs, 2L Standards and Results are presented in ug/l.
 Data from Environment 1 laboratory report dated 10/01/14, Client ID# 6072.

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Appendix A

Laboratory Analytical Report

**September 2014 Groundwater Monitoring Report
Bladen County Closed MSW Landfill
Solid Waste Permit No. 09-01**

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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#: 6072

BLADEN COUNTY MSW
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 09/04/14
DATE REPORTED : 10/01/14

REVIEWED BY: 

PARAMETERS	MDL	MW-1 SWSL	MW-3	MW-4	MW-5A	MW-7	Analysis		Method Code
							Date	Analyst	
PH (field measurement), Units			6.4	6.4	7.2	7.0	Missing	09/04/14 BF	4500HB-00
Arsenic, ug/l	0.10	10.0	0.42 J	4.6 J	0.84 J	--- U	Missing	09/08/14 LFJ	EPA200.8
Barium, ug/l	0.12	100.0	129	29.8 J	85.1 J	121	Missing	09/08/14 LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.17 J	--- U	0.09 J	0.14 J	Missing	09/08/14 LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	0.894 J	0.58 J	3.1 J	0.27 J	Missing	09/08/14 LFJ	EPA200.8
Lead, ug/l	0.13	10.0	2.5 J	--- U	3.5 J	--- U	Missing	09/08/14 LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	--- U	--- U	--- U	--- U	Missing	09/10/14 MTM	245.1 R3-9
Selenium, ug/l	0.16	10.0	1.1 J	0.34 J	0.57 J	0.51 J	Missing	09/08/14 LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	--- U	--- U	Missing	09/08/14 LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	266	632	846	1347	Missing	09/04/14 BF	2510B-97
Temperature, °C			20	20	20	20	Missing	09/04/14 BF	2550B-00
Static Water Level, feet			14.57	10.49	35.68	22.50	Missing	09/04/14 BF	
Well Depth, feet			41.12	21.52	44.32	31.74	Missing	09/04/14 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#: 6072

BLADEN COUNTY MSW
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

DATE COLLECTED: 09/04/14
DATE REPORTED : 10/01/14

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-8	MW-9	SW-1	SW-2	Trip	Analysis		Method
							Blank	Date	Analyst	Code
PH (field measurement), Units			6.4	6.6	6.7	7.4		09/04/14	BF	4500HB-00
Arsenic, ug/l	0.10	10.0	0.24 J	5.7 J	0.61 J	0.45 J		09/08/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	65.3 J	100.0	34.5 J	54.3 J		09/08/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.10 J	0.11 J	---	U		09/08/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	0.30 J	2.2 J	0.62 J	0.70 J		09/08/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	---	1.2 J	0.27 J	0.37 J		09/08/14	LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	---	U	---	U		09/10/14	MTM	245.1 R3-9
Selenium, ug/l	0.16	10.0	0.63 J	16	0.25 J	0.49 J		09/08/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	---	U	---	U		09/08/14	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	489	2500	169	527		09/04/14	BF	2510B-97
Temperature, °C			21	21	26	24		09/04/14	BF	2550B-00
Static Water Level, feet			17.30	8.90				09/04/14	BF	
Well Depth, feet			30.00	17.58				09/04/14	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

CLIENT: BLADEN COUNTY MSW
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6072

ANALYST: MAO
DATE COLLECTED: 09/04/14
DATE ANALYZED: 09/13/14
DATE REPORTED: 10/01/14

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1 (96)

PARAMETERS, ug/l	MDL	SWSL	MW-1	MW-3	MW-4	MW-5A	MW-8
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	0.90 J	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

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

CLIENT: BLADEN COUNTY MSW
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6072
ANALYST: MAO
DATE COLLECTED: 09/04/14
DATE ANALYZED: 09/13/14
DATE REPORTED: 10/01/14

Page: 2

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1 (96)

PARAMETERS, ug/l	MDL	SWSL	MW-9	SW-1	SW-2	Trip Blank				
1. Chloromethane	0.77	1.0	---	U	---	U	---	U		
2. Vinyl Chloride	0.63	1.0	1.90	---	U	---	U	---	U	
3. Bromomethane	0.67	10.0	---	U	---	U	---	U	---	U
4. Chloroethane	0.48	10.0	---	U	---	U	---	U	---	U
5. Trichlorofluoromethane	0.24	1.0	---	U	---	U	---	U	---	U
6. 1,1-Dichloroethene	0.17	5.0	---	U	---	U	---	U	---	U
7. Acetone	9.06	100.0	---	U	---	U	---	U	---	U
8. Iodomethane	0.26	10.0	---	U	---	U	---	U	---	U
9. Carbon Disulfide	0.23	100.0	---	U	---	U	---	U	---	U
10. Methylene Chloride	0.64	1.0	---	U	---	U	---	U	---	U
11. trans-1,2-Dichloroethene	0.23	5.0	---	U	---	U	---	U	---	U
12. 1,1-Dichloroethane	0.20	5.0	0.40	J	---	U	---	U	---	U
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U	---	U
14. Cis-1,2-Dichloroethene	0.25	5.0	2.60	J	---	U	---	U	---	U
15. 2-Butanone	2.21	100.0	---	U	---	U	---	U	---	U
16. Bromochloromethane	0.27	3.0	---	U	---	U	---	U	---	U
17. Chloroform	0.25	5.0	---	U	---	U	---	U	---	U
18. 1,1,1-Trichloroethane	0.19	1.0	---	U	---	U	---	U	---	U
19. Carbon Tetrachloride	0.22	1.0	---	U	---	U	---	U	---	U
20. Benzene	0.24	1.0	0.80	J	---	U	---	U	---	U
21. 1,2-Dichloroethane	0.27	1.0	---	U	---	U	---	U	---	U
22. Trichloroethene	0.23	1.0	---	U	---	U	---	U	---	U
23. 1,2-Dichloropropane	0.21	1.0	---	U	---	U	---	U	---	U
24. Bromodichloromethane	0.21	1.0	---	U	---	U	---	U	---	U
25. Cis-1,3-Dichloropropene	0.24	1.0	---	U	---	U	---	U	---	U
26. 4-Methyl-2-Pentanone	1.19	100.0	---	U	---	U	---	U	---	U
27. Toluene	0.23	1.0	---	U	---	U	---	U	---	U
28. trans-1,3-Dichloropropene	0.28	1.0	---	U	---	U	---	U	---	U
29. 1,1,2-Trichloroethane	0.25	1.0	---	U	---	U	---	U	---	U
30. Tetrachloroethene	0.17	1.0	---	U	---	U	---	U	---	U
31. 2-Hexanone	1.57	50.0	---	U	---	U	---	U	---	U
32. Dibromochloromethane	0.24	3.0	---	U	---	U	---	U	---	U
33. 1,2-Dibromoethane	0.26	1.0	---	U	---	U	---	U	---	U
34. Chlorobenzene	0.30	3.0	2.10	J	---	U	---	U	---	U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	---	U	---	U	---	U	---	U
36. Ethylbenzene	0.21	1.0	---	U	---	U	---	U	---	U
37. Xylenes	0.68	5.0	---	U	---	U	---	U	---	U
38. Dibromomethane	0.28	10.0	---	U	---	U	---	U	---	U
39. Styrene	0.19	1.0	---	U	---	U	---	U	---	U
40. Bromoform	0.20	3.0	---	U	---	U	---	U	---	U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	---	U	---	U	---	U	---	U
42. 1,2,3-Trichloropropane	0.43	1.0	---	U	---	U	---	U	---	U
43. 1,4-Dichlorobenzene	0.39	1.0	---	U	---	U	---	U	---	U
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	---	U	---	U	---	U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	---	U	---	U	---	U	---	U
46. Acrylonitrile	2.72	200.0	---	U	---	U	---	U	---	U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	---	U	---	U	---	U	---	U

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: 6072 Week: 39

BLADEN COUNTY MSW
 MS. JOAN SMYTH
 SMITH GARDNER, INC.
 14 NORTH BOYLAN AVE.
 RALEIGH NC 27603

(919) 828-0577

COLLECTION		TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION			PARAMETERS/TESTS			CLASSIFICATION:								
SAMPLE LOCATION	DATE				TIME	CHLORINE	UV	NONE	Field pH	Metals		Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	CHLORINE NEUTRALIZED AT COLLECTION	pH CHECK (LAB)
MW-1	9-4-14	1050	20	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				A - NONE D - NAOH B - HNO ₃ E - HCL C - H ₂ SO ₄ F - ZINC ACETATE/NAOH G - NATHIOSULFATE						
MW-3	9-4-14	1045	20	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/> WASTEWATER (NPDES) <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> DWQ/GW <input checked="" type="checkbox"/> SOLID WASTE SECTION						
MW-4	9-4-14	1035	20	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
MW-5A	9-4-14	1020	20	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
MW-7	9-4-14 1015 4 20 4 20 4 20 4 20 4 20 4 20 4 20																		
MW-8	9-4-14	1005	21	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
MW-9	9-4-14	1010	21	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY <input checked="" type="checkbox"/> N						
SW-1	9-4-14	0950	26	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				SAMPLES COLLECTED BY: (Please Print) Bobby / Tom						
SW-2	9-4-14	1025	24	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				SAMPLES RECEIVED IN LAB AT 0°/ °C						
Trip Blank	9-4-14			2							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	COMMENTS: MW-7 could NOT locate because of falling trees.															
Bobby / Tom	9-4-14 13:25	[Signature]	9/4/14 330																
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME																
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME																

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.

NO 282021