

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	09-05	.0500	March 5, 2013

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.

Madeline German, PG Geologist 919-828-0577x222
 Facility Representative Name (Print) Title (Area Code) Telephone Number
 Signature Madeline German Date 4-15-13 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)



This page intentionally left blank.

**Groundwater Monitoring Report
March 2013 Semi-Annual Event**

**Bladen County Closed MSW Landfill
NC Solid Waste Permit No. 09-05**

Prepared for:

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



April 2013

Prepared by:

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



PRINTED ON 100% RECYCLED PAPER

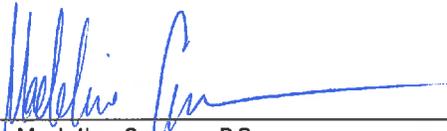
This page intentionally left blank.

Groundwater Monitoring Report – March 2013

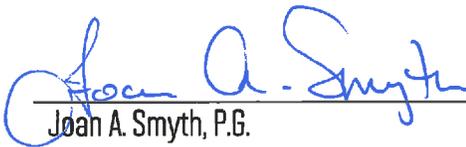
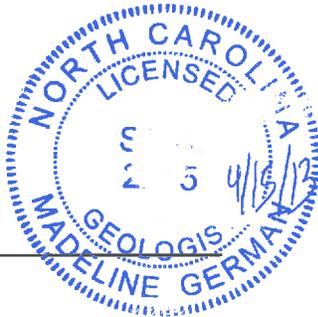
Bladen County Closed MSW Landfill Solid Waste Permit No. 09-05

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



April 2013

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

This page intentionally left blank.

**Bladen County Closed MSW Landfill
NC Solid Waste Permit No. 09-05**

March 2013 Groundwater Monitoring Report

Table of Contents

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 SITE GEOLOGY	1
3.0 SAMPLING PROCEDURES	1
4.0 FIELD AND LABORATORY RESULTS	2
4.1 Field Parameter Results	2
4.2 Inorganic and Organic Constituent Results	2
5.0 GROUNDWATER CHARACTERIZATION	2
6.0 CONCLUSIONS	2

FIGURE

Figure 1 Groundwater Potentiometric Map

TABLES

Table 1 Groundwater Elevation Data
Table 2 Field Parameter Results
Table 3 Detected Constituents

APPENDICES

Appendix A Laboratory Analytical Report

This page intentionally left blank.

1.0 INTRODUCTION

The Closed Bladen County MSW Landfill, (Solid Waste Permit # 09-05) requires semi-annual ground water monitoring as a condition of the water quality monitoring program. This report, prepared by Smith Gardner, Inc. (S+G), presents the March 5, 2013 monitoring event results. This event was performed in compliance with NC Solid Waste Regulations.

As specified in rule 15A NCAC 13B .1632 (j) and the Solid Waste Section (SWS) Environmental Monitoring Report Form, this report includes field procedure and laboratory analyses summaries for the closed MSW site. A potentiometric surface map, results summary tables and laboratory analytical reports 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 PROCEDURES

The sampling event was reportedly performed by Environment 1, Incorporated (Greenville, NC) personnel on March 5, 2013. The ground water monitoring network for the MSW landfill includes seven ground water 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-1 serves as the background location. **Figure 1** illustrates sampling locations.

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 and field parameter results are included in **Tables 1 and 2**, respectively.

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

4.0 FIELD AND 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. The laboratory report is included as **Appendix A**.

4.1 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.

4.2 Inorganic and Organic Constituent Results

Water samples were analyzed to the laboratory established Method Detection Limits (MDL).

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

Three organic constituents: benzene, chlorobenzene and vinyl chloride, were detected above their SWSL. Both benzene and vinyl chloride in MW-9 were also detected above their 2L Standard.

No quantifiable detections were reported in samples from the surface water samples.

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.

5.0 GROUNDWATER CHARACTERIZATION

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

6.0 CONCLUSIONS

The reported barium and selenium concentrations are likely due to natural deposit erosion and suspended solids in the sample.

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

Benzene, chlorobenzene and vinyl chloride were detected above the SWSL in MW-9. Reported concentrations are consistent with historically reported detections in this well. Monitoring well MW-9 is located immediately adjacent to the waste and adjacent to an unnamed tributary of Brown's Creek.

Surface water sampling did not indicate contaminant migration.

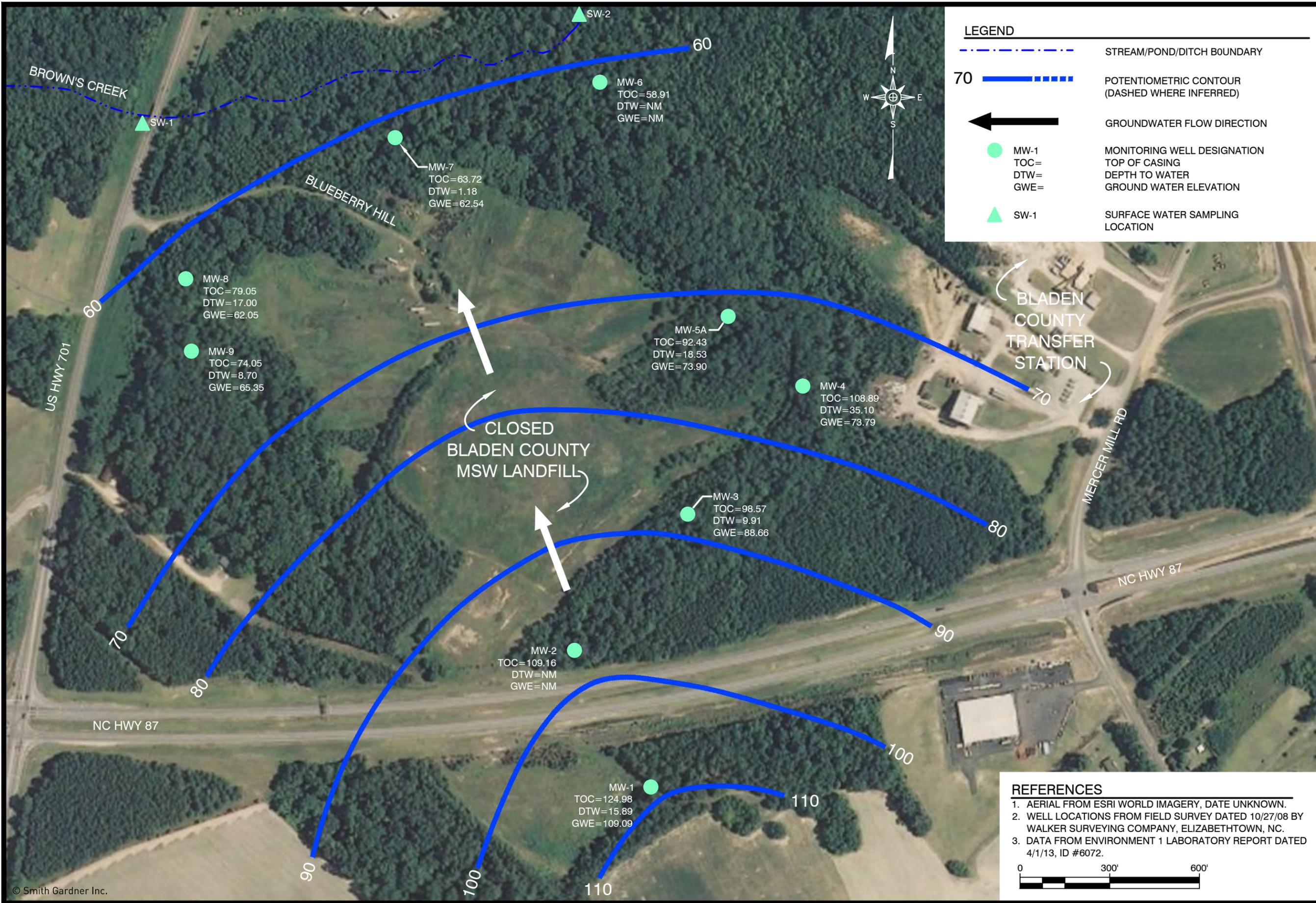
The next ground water monitoring event is scheduled for September 2013. Following receipt of laboratory data a report will be prepared and submitted to NCDENR and Bladen County.

This page intentionally left blank.

FIGURES

**March 2012 - Groundwater Monitoring Report
Bladen County Closed MSW Landfill
NC Solid Waste Permit No. 09-05**

This page intentionally left blank.



PREPARED FOR: **BLADEN COUNTY MSW LANDFILL POTENTIOMETRIC SURFACE MAP MARCH 2013**

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

DRAWN: C.T.J.	APPROVED: M.M.G.	SCALE: AS SHOWN	FIGURE NO: 1
DATE: Apr 2013	PROJECT NO: BLADEN 08-4	FILENAME: BLADEN-B0031	

THIS PAGE INTENTIONALLY LEFT BLANK

TABLES

**March 2012 – Groundwater Monitoring Report
Bladen County Closed MSW Landfill
Solid Waste Permit No. 09-05**

This page intentionally left blank.

**Table 1
Bladen County MSW Landfill
Ground Water Elevation Data
3/5/2013**

Well	Well location Northing	Well location Easting	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	310645.01	2117281.60	124.98	15.89	109.09
MW-3	311555.58	2117405.04	98.57	9.91	88.66
MW-4	311983.00	2117790.01	108.89	35.10	73.79
MW-5A	312215.61	2117539.78	92.43	18.53	73.9
MW-7	312812.23	2116426.04	63.72	1.18	62.54
MW-8	312341.38	2115725.65	79.05	17.00	62.05
MW-9	312099.55	2115744.51	74.05	8.70	65.35

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

Data from Environment 1 laboratory report dated 4/1/13 ID# 6072.

Table 2
Bladen County MSW Landfill
Field Parameters
3/5/2013

Well Identification #	Temperature (°Celsius)	Specific Conductivity (uS/cm)	pH
MW-1	17	230	5.5
MW-3	16	629	6.5
MW-4	18	725	7.4
MW-5A	17	1096	7.1
MW-7	13	774	6.7
MW-8	16	337	6.7
MW-9	15	2320	6.6
SW-1	8	175	6.6
SW-2	9	726	7.3

Note: 1. Data from Environment 1 laboratory report dated 4/1/13, ID# 6072.
2. NM = Not Measured

Table 3
Bladen County MSW Landfill
Detected Inorganic and Organic Constituents
3/5/2013

Constituents	MDL	SWSL	2L	2B	MW-1	MW-3	MW-4	MW-5A	MW-7	MW-8	MW-9	SW-1	SW-2
<u>Inorganic Constituents</u>													
Arsenic	0.13	10	10	10	0.14 J	3.6 J	0.18 J	0.35 J	1.7 J	0.28 J	5.5 J	0.50 J	0.63 J
Barium	0.07	100	700	2000000	102	31.4 J	55.0 J	112	34.8 J	40.4 J	95.9 J	33.0 J	44.9 J
Cadmium	0.03	1	2	2	0.06 J	0.30 J	0.11 J	0.21 J	0.11 J	0.24 J	0.23 J	0.05 J	0.06 J
Total Chromium	0.18	10	10	50	<0.18	<0.18	<0.18	<0.18	<0.18	0.23 J	1.3 J	0.79 J	0.45 J
Lead	0.08	10	15	25	0.54 J	0.08 J	0.20 J	<0.08	<0.09 J	0.18 J	0.76 J	0.66 J	0.16 J
Selenium	0.17	10	20	5	0.93 J	0.71 J	0.64 J	0.92 J	1.1 J	0.45 J	13	0.25 J	1.1 J
<u>Organic Constituents</u>													
1,1-Dichloroethane	0.20	5	6	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.30 J	<0.20	<0.20
1,4-Dichlorobenzene	0.39	1	6	100	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	0.60 J	<0.39	<0.39
Benzene	0.24	1	1	51	<0.24	0.90 J	<0.24	<0.24	<0.24	<0.24	1.10	<0.24	<0.24
Chlorobenzene	0.30	3	50	140	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	4.30	<0.30	<0.30
Cis-1,2-Dichloroethene	0.25	5	70	4.9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	4.0 J	<0.25	<0.25
Vinyl Chloride	0.63	1	0.03	2.4	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	2.80	<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
- Shading - Concentrations above 2L standard.
- Bold** - Constituent detected above SWSL
- 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 04/01/13, ID# 6072.

THIS PAGE LEFT BLANK INTENTIONALLY

Appendix A

Laboratory Analytical Report

**March 2012 – Groundwater Monitoring Report
Bladen County Closed MSW Landfill
Solid Waste Permit No. 09-05**

This page intentionally left blank.

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: 03/05/13
DATE REPORTED : 04/01/13

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-1	MW-3	MW-4	MW-5A	MW-7	Analysis	Method
								Date	Analyst
PH (field measurement), Units			5.5	6.5	7.4	7.1	6.7	03/05/13BP	4500HB-00
Arsenic, ug/l	0.13	10.0	0.14 J	3.6 J	0.18 J	0.35 J	1.7 J	03/11/13LFFJ	EPA200.8
Barium, ug/l	0.07	100.0	102	31.4 J	55.0 J	112	34.8 J	03/11/13LFFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	0.06 J	0.30 J	0.11 J	0.21 J	0.11 J	03/11/13LFFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	--- U	03/11/13LFFJ	EPA200.8				
Lead, ug/l	0.08	10.0	0.54 J	0.08 J	0.20 J	--- U	0.09 J	03/11/13LFFJ	EPA200.8
Mercury, ug/l	0.02	0.20	--- U	03/13/13LFFJ	EPA6020A				
Selenium, ug/l	0.17	10.0	0.93 J	0.71 J	0.64 J	0.92 J	1.1 J	03/11/13LFFJ	EPA200.8
Silver, ug/l	0.10	10.0	--- U	03/11/13LFFJ	EPA200.8				
Conductivity (at 25c), uMhos/cm	1.0	1.0	230	629	725	1096	774	03/05/13BP	2510B-97
Temperature, °C			17	16	18	17	13	03/05/13BP	2550B-00
Static Water Level, feet			15.89	9.91	35.10	18.53	1.18	03/05/13BP	
Well Depth, feet			41.12	21.52	44.32	31.74	15.14	03/05/13BP	

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: 03/05/13
DATE REPORTED : 04/01/13

REVIEWED BY: 

PARAMETERS	MDL	MW-8	MW-9	SW-1	SW-2	Trip	Analysis	Method
		SWSL				Blank	Date	Analyst
PH (field measurement), Units			6.7	6.6	6.6	7.3	03/05/13BF	4500HB-00
Arsenic, ug/l	0.13	10.0	0.28 J	5.5 J			03/11/13LFFJ	EPA200.8
Arsenic, ug/l	0.13	10.0			0.50 J	0.63 J	03/15/13MEL	EPA200.8
Barium, ug/l	0.07	100.0	40.4 J	95.9 J			03/11/13LFFJ	EPA200.8
Barium, ug/l	0.07	100.0			33.0 J	44.9 J	03/15/13MEL	EPA200.8
Cadmium, ug/l	0.03	1.0	0.24 J	0.23 J			03/11/13LFFJ	EPA200.8
Cadmium, ug/l	0.03	1.0			0.05 J	0.06 J	03/15/13MEL	EPA200.8
Total Chromium, ug/l	0.18	10.0	0.23 J	1.3 J			03/11/13LFFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0			0.79 J	0.45 J	03/15/13MEL	EPA200.8
Lead, ug/l	0.08	10.0	0.18 J	0.76 J			03/11/13LFFJ	EPA200.8
Lead, ug/l	0.08	10.0			0.66 J	0.16 J	03/15/13MEL	EPA200.8
Mercury, ug/l	0.03	0.20	--- U	--- U			03/13/13LFFJ	EPA6020A
Mercury, ug/l	0.03	0.20			--- U		03/20/13ADD	245.1 R3-94
Mercury, ug/l	0.03	0.20				--- U	04/01/13ADD	245.1 R3-94
Selenium, ug/l	0.17	10.0	0.45 J	13			03/11/13LFFJ	EPA200.8
Selenium, ug/l	0.17	10.0			0.25 J	1.1 J	03/15/13MEL	EPA200.8
Silver, ug/l	0.10	10.0	--- U	--- U			03/11/13LFFJ	EPA200.8
Silver, ug/l	0.10	10.0			--- U	--- U	03/15/13MEL	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	337	2320	175	726	03/05/13BF	2510B-97
Temperature, °C			16	15	8	9	03/05/13BF	2550B-00
Static Water Level, feet			17.00	8.70			03/05/13BF	
Well Depth, feet			30.00	17.58			03/05/13BF	

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: 03/05/13 Page: 1
DATE ANALYZED: 03/13/13
DATE REPORTED: 04/01/13

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1 (96)

PARAMETERS, ug/l	MDL	SWSL	MW-1	MW-3	MW-4	MW-5A	MW-7
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-Dichloropropane	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: 03/05/13 Page: 2
DATE ANALYZED: 03/13/13
DATE REPORTED: 04/01/13

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-8	MW-9	SW-1	SW-2	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	2.80	--- 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	0.30 J	--- 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	4.00 J	--- 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	1.10	--- 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	4.30	--- 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	0.60 J	--- 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, Inc.
 P.O. Box 7085, 114 Oakmont Dr.
 Greenville, NC 27858

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

CLIENT: 6072 Week: 13

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

(919) 828-0577

CHAIN OF CUSTODY RECORD

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION			Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	PARAMETERS	CLASSIFICATION:	
	DATE	TIME				<input type="checkbox"/> CHLORINE	<input type="checkbox"/> UV	<input type="checkbox"/> NONE											
MMW-1	3-5-13	1215		12	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	A	A	A							
MMW-3	3-5-13	0955		16	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
MMW-4	3-5-13	0950		18	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
MMW-5A	3-5-13	0940		17	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
MMW-7	3-5-13	0915		13	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
MMW-8	3-5-13	1020		14	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
MMW-9	3-5-13	1005		15	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
SW-1	3-5-13	0845		8	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
SW-2	3-5-13	0930		9	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P							
Trip Blank					2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
RELINQUISHED BY (SIG.) <i>Bobby Fay</i>	DATE/TIME 3-5-13 1430	DATE/TIME	RECEIVED BY (SIG.) <i>[Signature]</i>	DATE/TIME 3/5/13 2324	DATE/TIME	RECEIVED BY (SIG.) <i>[Signature]</i>	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
COMMENTS: SAMPLER MUST BE MAINTAINED DURING SHIPMENT/DELIVERY SAMPLER COLLECTED BY: <i>Bobby Fay</i> SAMPLER RECEIVED IN LAB AT <i>0-2</i> °C																			

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 254689