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Doc/Event #:

NC DENR

# Environmental Monitoring Reporting Form

Division of Waste Management - Solid Waste

**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):

Mecklenburg County Solid Waste Services

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

Name: Amber R. Grzymski

Phone: 704-432-2478

E-mail: Amber.Grzymski@mecklenburgcountync.gov

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Holbrooks Road Landfill	15401 Holbrooks Road	60-02	.0500	September 24-25, 2012

### 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.

Amber R. Grzymski, P.G.

Project Manager

704-432-2478

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature

Date

Affix NC Licensed/ Professional Geologist Seal

700 N Tryon Street, Charlotte, NC 28202

Facility Representative Address

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

Revised 6/2009





MECKLENBURG COUNTY  
Land Use and Environmental Services Agency  
Solid Waste Services  
November 7, 2012

Jaclynne Drummond  
North Carolina Department of Environment  
and Natural Resources  
Division of Waste Management  
Groundwater Compliance Unit  
Mail Service Center 1646  
Raleigh, NC 27699-1646

Subject: Holbrooks Road Landfill Permit 60-02  
Semi-annual Monitoring Results

Dear Ms. Drummond:

Mecklenburg County conducted semi-annual water quality monitoring at the closed Holbrooks Road Landfill in September 2012 in accordance with the approved sample and analysis plan dated March 27, 2003. This report details the results of that monitoring event. Laboratory analytical data, field-measured data table of values exceeding 2L standards and landfill gas monitoring data is contained on the electronic data deliverable submittal.

Samples were collected from fifteen (15) monitoring wells (HRW-7, HRW-8, HRW-9, HRW-10, HRW-11R, HRW-12, HRW-13, HRW-14, HRW-15, HRW-16, HRW-17, HRW-18, HRW-19, HRW-20 and HRW-21) and three (3) surface-water sampling locations (HRSW-2, HRSW-3 and HRSW-4). Samples were analyzed for metals and volatile organic compounds ("VOCs") listed in Appendix I of 40 CFR Part 258.54 "Detection monitoring program". Field measurements of temperature, pH, and specific conductivity were made at each sampling location using a calibrated instrument. Additionally, measurements of dissolved oxygen were made at each surface-water sampling location.

The electronic data deliverable package containing the monitoring data is labeled to reflect the units used for reporting. Surface water standards listed are the water quality standards established for freshwater classification for aquatic life as outlined in 15A NCAC 2B "Classification and Water Quality Standards Applicable to Surface Waters of North Carolina". Groundwater standards listed are the standards outlined in 15A NCAC 2L "Classification of Water Quality Standards applicable to the Groundwaters of North Carolina". If the sample is reported in parts per billion, then the standard is also reported in parts per billion.

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**Surface-water samples:**

No VOCs were detected in any of the samples collected from the three surface-water sampling locations (HRSW-2, HRSW-4 and HRSW-3). Copper was detected in two sampling locations as shown in the following table.

Sample Location	Metal Constituent	Concentration	2b Standard
HRSW-2 upstream	Copper	2.1	7
HRSW-4 mid-stream	Copper	2.3	7

All field-measured parameters were within the established regulatory limits. The following table summarizes field-measured parameters for surface water samples.

Sample Location	Temp. °C	pH S.U.	Specific Conductivity ms/cm	Dissolved Oxygen mg/l
HRSW-2 upstream	13.2	7.08	0.247	8.12
HRSW-4 mid-stream	13.0	7.08	0.244	7.69
HRSW-3 downstream	13.5	7.33	0.258	7.82

**Groundwater samples:**

Barium, nickel, vanadium, cobalt, copper, cadmium and chromium were detected in various wells above the 2l standard. The standards for vanadium and cobalt were recently added and wells that have had no violations of the 2l standard in the past now currently have detections above the 2l standard. The following table summarizes metals detection for groundwater samples.

Well ID	As ug/l	Ba ug/l	Cd ug/l	Cr ug/l	Co ug/l	Cu ug/l	Pb ug/l	Ni ug/l	Se ug/l	Vn ug/l	Zn ug/l
HRW-7	-----	240	<b>98</b>	5.3	-----	12	-----	8.3	-----	<b>11</b>	120
HRW-8	-----	120	-----	6.9	<b>58</b>	14	-----	-----	-----	<b>28</b>	15
HRW-9	-----	260	-----	-----	-----	-----	-----	-----	-----	-----	-----
HRW-10	-----	190	-----	-----	-----	5.0	-----	14	6.0	-----	-----
HRW-11R	-----	410	-----	-----	<b>13</b>	4.6	-----	22	9.7	-----	-----
HRW-12	-----	<b>770</b>	<b>4.6</b>	-----	<b>25</b>	<b>1100</b>	-----	<b>140</b>	8.1	<b>6.3</b>	-----
HRW-13	-----	-----	-----	-----	<b>5.5</b>	8.3	-----	-----	-----	<b>9</b>	11
HRW-14	-----	-----	-----	6.5	<b>5.9</b>	39	-----	-----	-----	<b>51</b>	32
HRW-15	-----	-----	-----	-----	-----	5.0	-----	-----	-----	<b>7.2</b>	-----
HRW-16	-----	120	-----	-----	-----	2	-----	-----	-----	-----	-----
HRW-17	-----	-----	-----	-----	-----	4.6	6.9	-----	-----	-----	-----
HRW-18	-----	260	-----	<b>10</b>	<b>9.1</b>	8.3	-----	18	-----	-----	17
HRW-19	-----	-----	-----	-----	-----	5.0	-----	-----	-----	<b>10</b>	-----

Well ID	As ug/l	Ba ug/l	Cd ug/l	Cr ug/l	Co ug/l	Cu ug/l	Pb ug/l	Ni ug/l	Se ug/l	Vn ug/l	Zn ug/l
HRW-20	-----	-----	-----	-----	-----	-----	-----	-----	-----	<b>7.6</b>	-----
HRW-21	-----	-----	-----	-----	-----	-----	-----	-----	-----	<b>6</b>	-----
2L Std.	10	700	2	10	1	1,000	15	100	20	0.3	1,000

Note: Results shown in bold exceed the 2L standard.

VOCs were detected in six monitoring wells; HRW-7, HRW-9, HRW-11R, HRW-12, HRW-16 and HRW-18. The following table summarizes VOC detections.

Well ID	Volatile Constituent	Concentration (ug/l)	2L Standard (ug/l)
HRW-7	Cis-1,2-Dichloroethene	8	70
	<b>Trichloroethene</b>	<b>7</b>	<b>3</b>
HRW-9	<b>Cis-1,2 Dichloroethene</b>	<b>85</b>	<b>70</b>
	<b>Tetrachloroethene</b>	<b>4</b>	<b>0.7</b>
	<b>Trichloroethene</b>	<b>7</b>	<b>3</b>
	<b>Vinyl Chloride</b>	<b>9</b>	<b>0.03</b>
	1,2-Dichlorobenzene	8	20
	<b>1,4-Dichlorobenzene</b>	<b>9</b>	<b>6</b>
	<b>1,1-Dichloroethane</b>	<b>41</b>	<b>6</b>
HRW-11R	Chlorobenzene	8	50
HRW-12	1,1-Dichloroethane	5	6
	1,4-Dichlorobenzene	3	6
	Chlorobenzene	8	50
HRW-16	1,1-Dichloroethane	3	6
HRW-18	<b>Benzene</b>	<b>33</b>	<b>1</b>
	Chloroethane	20	3,000
	<b>1,1 Dichloroethane</b>	<b>45</b>	<b>6</b>
	<b>1,4 Dichlorobenzene</b>	<b>7</b>	<b>6</b>
	<b>Vinyl Chloride</b>	<b>30</b>	<b>0.03</b>
	<b>1,2-Dichloropropane</b>	<b>4</b>	<b>0.6</b>
	<b>1,2-Dichloroethane</b>	<b>3</b>	<b>0.4</b>
	Toluene	4	600

Note: Results shown in bold exceed the 2L standard.

Measurements of pH were more acidic than the 2L standard range of 6.5 to 8.5 standard units at locations HRW-7, HRW-8, HRW-9, HRW-10, HRW-11R, HRW-12, HRW-13, HRW-16, HRW-17, HRW-18, HRW-19, HRW-20 and background well HRW-21. Field-measured parameters for groundwater samples are summarized in the following table.

Sample Location	Temp. °C	PH	Specific Conductivity ms/cm
HRW-7	18.6	<b>5.82</b>	0.535
HRW-8	15.3	<b>5.85</b>	0.175
HRW-9	14.6	<b>5.75</b>	0.796
HRW-10	16.8	<b>6.05</b>	0.884
HRW-11R	16.7	<b>5.91</b>	2.04
HRW-12	16.3	<b>6.10</b>	2.21
HRW-13	16.7	<b>5.84</b>	0.332
HRW-14	14.8	6.77	0.211
HRW-15	14.7	6.67	0.192
HRW-16	16.8	<b>6.15</b>	0.324
HRW-17	14.9	<b>6.11</b>	0.223
HRW-18	16.8	<b>5.92</b>	1.268
HRW-19	15.3	<b>6.11</b>	0.308
HRW-20	15.3	<b>6.14</b>	0.204
HRW-21	16.3	<b>5.82</b>	0.429

Note: Results shown in bold are outside of the 2L standard range of 6.5 - 8.5 S.U.

Please contact me at [amber.grzynski@mecklenburgcountync.gov](mailto:amber.grzynski@mecklenburgcountync.gov) or (704) 432-2478 if you have any questions regarding this report.

Sincerely,

Amber R. Grzynski, P.G.  
 Project Manager  
 Solid Waste Services





**LEGEND**

- Y Methane Probe
- Y Methane Vent
- Z Monitor Well
- Surface Water
- Methane Intercept Trench
- 10 Foot Contour
- Creeks
- Mecklenburg County-Owned Parcel

Note:  
Aerial Taken March of 2004

0 50 100 200 Feet  
1 inch equals 100 Feet