



Duke Energy
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078

September 03, 2013

Ms. Elizabeth Werner
North Carolina Department of
Environment and Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

Subject: Semi-annual Groundwater Monitoring Report – June 2013
Duke Energy Carolinas, LLC
McGuire Nuclear Station
Landfill #2 (Synthetically Lined), Permit #60-04

Certified Mail: 7011 0470 0000 9847 0853

Dear Ms. Werner:

Duke Energy is providing the results of semi-annual groundwater monitoring for the Synthetically Lined McGuire Nuclear Station Landfill #2, located in Huntersville, North Carolina.

On June 10-11, 2013, groundwater and surface water samples were collected in accordance with the SAP. Table 2 provides a summary of groundwater field and analytical results. Table 3 provides a summary of surface water field and analytical results. A table summarizing sampling results that equal or exceed NCAC 2L standards is provided as Table 5.

Duke Energy personnel sample designated groundwater and surface water locations at McGuire Nuclear Station's Landfill #2 (Synthetically Lined) semi-annually during June and December. The next landfill monitoring event is planned for December 2013 with a report of monitoring results to follow.

If you have any questions or concerns about this report, please contact Sean DeNeale at 704-382-4761 or at Sean.DeNeale@duke-energy.com

Sincerely,

Charles J. Morris III
Duke Energy
McGuire Nuclear Station
Station Manager

Electronic cc: Mr. Tim Hunsucker – Duke Energy Corporation
Mr. Bill Miller – HDR Engineering, Inc.

Mr. Scott Spinner – HDR Engineering, Inc.
Mr. Sean DeNeale - Engineer II Duke Energy Environmental Services
Mr. John Williamson – McGuire Nuclear Station

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.
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.
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):

HDR Engineering, Inc. of the Carolinas (Consultant)

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

Name: William M. Miller Phone: 828-891-6296
E-mail: bill.miller@hdrinc.com

Table with 5 columns: Facility name, Facility Address, Facility Permit #, NC Landfill Rule, Actual sampling dates. Row 1: Duke Energy Carolinas, LLC, 13339 Hagers Ferry Road, 6004, .0500, June 10-11, 2013.

Environmental Status: (Check all that apply)

- Initial/Background Monitoring, Detection Monitoring (checked), Assessment Monitoring, Corrective Action

Type of data submitted: (Check all that apply)

- Groundwater monitoring data from monitoring wells (checked), Groundwater monitoring data from private water supply wells (checked), Leachate monitoring data (checked), Surface water monitoring data (checked), Methane gas monitoring data, Corrective action 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.
Yes, a notification of values exceeding an explosive methane gas limit is attached.

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...

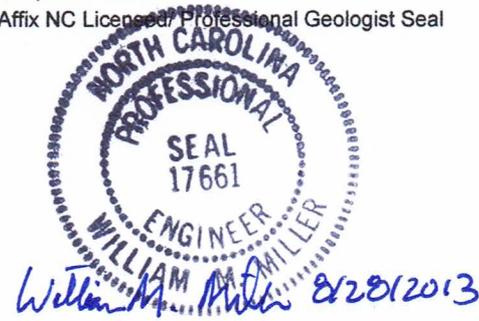
William M. Miller Senior Engineer (828) 891-6296
Facility Representative Name (Print) Title (Area Code) Telephone Number
Signature Date August 28, 2013 Affix NC Licensed Professional Geologist Seal

440 S. Church Street Suite 1000, Charlotte, NC 28202

Facility Representative Address

F-0116

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



**SEMIANNUAL GROUNDWATER
MONITORING REPORT**

MCGUIRE NUCLEAR STATION

**LANDFILL #2 (SYNTHETICALLY LINED)
PERMIT NO. 6004**

JUNE 2013 SAMPLING EVENT

**Prepared for:
DUKE ENERGY CAROLINAS, LLC
13339 Hagers Ferry Road
Huntersville, NC 28078**

**Prepared by:
HDR ENGINEERING, INC. OF THE CAROLINAS
Charlotte, North Carolina**

August 28, 2013



REPORT VERIFICATION

PROJECT: SEMIANNUAL GROUNDWATER MONITORING REPORT
MCGUIRE NUCLEAR STATION
LANDFILL #2 (SYNTHETICALLY LINED)
PERMIT NO. 6004

TITLE: JUNE 2013 SAMPLING EVENT

This document has been reviewed for accuracy and quality commensurate with the intended application.

Prepared by: *S.A. [Signature]*

Date: 8/28/2013

Checked by: *William M. Miller*

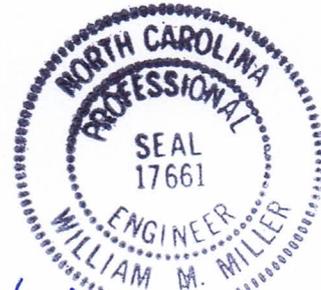
Date: 8/28/2013

Approved by: *T. Ziegler*

Date: 8/28/2013

Project Manager: Ty Ziegler, PE

Professional Engineer Seal:



William M. Miller 8/28/2013

HDR Engineering, Inc. of the Carolinas
440 South Church St., Suite 1000
Charlotte, NC 28202

North Carolina Engineering Firm Number F-0116

**SEMIANNUAL GROUNDWATER MONITORING REPORT
MCGUIRE NUCLEAR STATION
LANDFILL #2 (SYNTHETICALLY LINED)
PERMIT NO. 6004**

JUNE 2013 SAMPLING EVENT

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Section 1

Background

The McGuire Nuclear Station Landfill #2 (Synthetically Lined)¹ is located at the Duke Energy Carolinas, LLC (Duke Energy) McGuire Nuclear Station, in Mecklenburg County, NC. The landfill is permitted to accept waste that is specified by the Permit to Operate. The landfill was constructed with a high-density polyethylene (HDPE) synthetic liner and with a leachate collection and removal system. Leachate and contact stormwater are collected in a lined leachate collection basin and pumped to the McGuire Nuclear Station wastewater treatment system. The landfill is permitted under the North Carolina Department of Environment and Natural Resources (NCDENR) Solid Waste Permit No. 6004.

The landfill and nearby area are depicted on Figures 1 and 2. The landfill is located south of North Carolina Highway 73, north of Cashion Road, and to the west of Linderman Road. Cashion Road runs along a surface water divide, with surface flow draining to the northwest and to the southeast. A surface water drainage feature is located to the northeast of the landfill. This feature drains to the northwest, to a perennial, unnamed stream. Surface water sample location SW-1 is located in this unnamed stream (north of the landfill) and is upstream from the confluence with the surface water drainage feature. Surface water sample location SW-2 is also located in this unnamed stream, downstream from SW-1 and west of the landfill. The unnamed stream drains to the west, to the Catawba River. A second surface water drainage feature is located to the southwest of the landfill, draining to the northwest into the unnamed stream.

¹ In response to the North Carolina Division of Public Health, Radiation Protection Section, November 17, 2006 letter to Duke Energy, LLC, Duke Energy offered to indicate the McGuire Nuclear Station Landfill #2 as “(Synthetically Lined)” in reports.

As described in the Sampling and Analysis Plan² (SAP), the monitoring system at the landfill consists of the following:

| | | |
|-------------------|---------------|-------|
| Monitoring Wells: | MW-5 | MW-5A |
| | MW-6 | MW-6A |
| | MW-7 | MW-7A |
| | MW-8 | MW-8A |
| | MW-9 | MW-9A |
| | MW-10A | |
| Surface Water: | SW-1 | SW-2 |
| Leachate Sample: | Leachate Pond | |

The leachate sample is collected from the outfall of the leachate pipe which conveys leachate from the landfill to the leachate collection basin. The locations of the monitoring wells, the surface water sample locations, and the leachate collection basin are shown on Figure 2.

With the exception of well MW-10A, the wells are installed as well pairs with one shallow well and one deeper well adjacent to one another. The well with the “A” designation is the deeper well in each well pair. Well pair MW-9 and MW-9A are installed adjacent to and downgradient from the leachate collection basin. The remaining wells are installed adjacent to the landfill.

According to the SAP, monitoring wells MW-5 and MW-5A are the upgradient wells, and are considered the background wells for the site. Surface water sample location SW-1 is considered the upgradient or background surface water sample location.

The sampling was conducted by Duke Energy according to the North Carolina Solid Waste Management Guidelines. The parameters and constituents sampled were selected by Duke Energy and the NCDENR Division of Solid Waste and were analyzed by a North Carolina certified laboratory.

² *McGuire Nuclear Station Landfill #2, Permit Number 6004 Groundwater Monitoring Program Sampling and Analysis Plan*, February 24, 2009.

Section 2

Methods

2.1 Sampling and Analysis Methods

Collection of samples and documentation of sampling was performed by Duke Energy personnel. The groundwater, surface water, and leachate samples were analyzed by Pace Analytical Services, Inc., Charlotte (North Carolina Laboratory Certification #12) and the Duke Energy Analytical Laboratory (North Carolina Laboratory Certification #248).

The groundwater, surface water, and leachate samples were analyzed for the following constituents, in accordance with the SAP:

- Barium, chromium, and silver using Solid Waste (SW) Method 6010C
- Arsenic, cadmium, lead, and selenium using SW Method 6020A
- Mercury using Environmental Protection Agency (EPA) Method 7470
- Chloride and sulfate using EPA Method 9056A
- Volatile organic compounds (VOCs) using EPA Method 8260
- Total petroleum hydrocarbons (TPH) diesel range organics (DRO) using EPA Method 8015 Modified

In addition, the following analyses were performed in accordance with the requirements of the Radioactive Materials License No. 060-0379-7 issued by the North Carolina Division of Radiation Protection:

- Gross alpha radioactivity using EPA Method 900
- Gross beta radioactivity using EPA Method 900
- Tritium using EPA Method 906.0 Modified
- Gamma radioactivity for select isotopes

2.2 Statement of Work

HDR Engineering, Inc. (HDR) completed the following tasks:

- Received field sampling information provided by Duke Energy (performed by Duke Energy personnel) for monitoring wells MW-5A, MW-6, MW-6A, MW-7A, MW-8, MW-8A, MW-9, MW-9A, and MW-10A. No water level reading or sample was collected from MW-5 or MW-7 due to insufficient water volume in the wells. Data were also received for surface water sample locations SW-1 and SW-2, as well as for the leachate pond sample, collected at the outfall of the pipe conveying leachate from the landfill to the leachate collection basin. The samples were collected on June 10 and 11, 2013 and HDR received the data on July 8, 2013.
- Reviewed the laboratory analytical results for samples. The Electronic Data Deliverable (EDD), provided by Duke Energy, was adapted to conform to the format requirements of the NCDENR EDD template. HDR added an italicized J data qualifier (*J*) to indicate a detected concentration that attains or is greater than the laboratory's method reporting limit (MRL), but lower than the Solid Waste Section Limit³ (SWSL). A copy of the original EDD is retained in HDR's files.
- Developed a generalized groundwater surface contour map using map data and groundwater elevation data supplied by Duke Energy.
- Prepared and submitted this Semiannual Groundwater Monitoring Report to Duke Energy.

³ Solid Waste Section Limits (SWSL) is defined by NCDENR as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy. The SWSL is the concentration below which reported results must be qualified as estimated. NCDENR Division of Waste Management Memorandum dated February 23, 2007.

Section 3

Results

3.1 Site Groundwater Flow

Generalized groundwater surface contours for the site are shown on Figure 3. These contours were developed using groundwater elevations measured at the shallow wells on the date of sampling.

Groundwater in the area of the landfill is generally from the southeast end of the landfill toward the northwest and the unnamed stream described above. Groundwater flow on the east side of the landfill is towards the northeast, toward wells MW-6, MW-6A, and MW-10A, and the surface water drainage feature located northeast of the wells.

3.2 Analytical Results

A summary of the field data is presented in Table 1.

The groundwater sampling field and analytical results are summarized in Table 2. Where the analytical results were reported by the laboratory as less than the MDL, the results in the tables and the EDD are set equal to the MDL with a “U” qualifier. The groundwater monitoring analysis results for the semiannual constituents are compared to the groundwater standards found in Title 15A NCAC 02L .0202 (g) (2L Standards). A quality control (QC) sample from MW-5A was analyzed for TPH DRO. No EPA Method 8260 VOCs were measured above the laboratory’s method detection limits (MDLs). A summary of the well analytical results that equal or exceed the 2L Standards is presented in Table 5.

Surface water sample locations SW-1 and SW-2 are located on an unnamed stream. The unnamed stream is a tributary of the Catawba River, which is classified by the NCDENR Division of Water Quality as a Class WS-IV water at the confluence with the unnamed stream. As a result, the field and analytical results from these locations are compared to Title 15A, NCAC, Subchapter 2B Standards (2B Standards) for Class WS-IV water. The field and analytical results of surface water sampling are summarized in Table 3.

The MDL was greater than the respective 2L Standard for the following constituents:

- 1,1,2,2-Tetrachloroethane
- 1,2,3-Trichloropropane

- 1,2-Dibromo-3-chloropropane
- 1,2-Dibromoethane (EDB)
- Vinyl chloride

The MDL was greater than the respective 2B Standard for the following constituents:

- 1,1,2,2-Tetrachloroethane
- 1,2,3-Trichloropropane
- 1,2-Dibromo-3-chloropropane
- 1,2-Dibromoethane (EDB)
- Acrylonitrile
- Mercury
- Silver
- Vinyl chloride

The MDLs for the abovementioned constituents were all below their corresponding SWSLs as required by the February 23, 2007 NCDENR memo. These constituents were not detected above the MDL in the analyzed samples, and are not considered to exceed their respective 2L or 2B Standards.

The field and analytical results for leachate sampling are summarized in Table 4.

No sampled constituents were found to equal or exceed their respective SWSLs.

Selected samples were diluted as is normal laboratory practice to bring samples within the calibrated range of the analysis. Specifics regarding the samples that were diluted, including the dilution amount, are reported in the EDD.

The results of the radiological analyses are presented in Table 6. A copy of this report has been submitted to the NCDENR Radiation Protection Section for reference. HDR did not evaluate this data.

The chain-of-custody forms can be found in Appendix A.

FIGURES

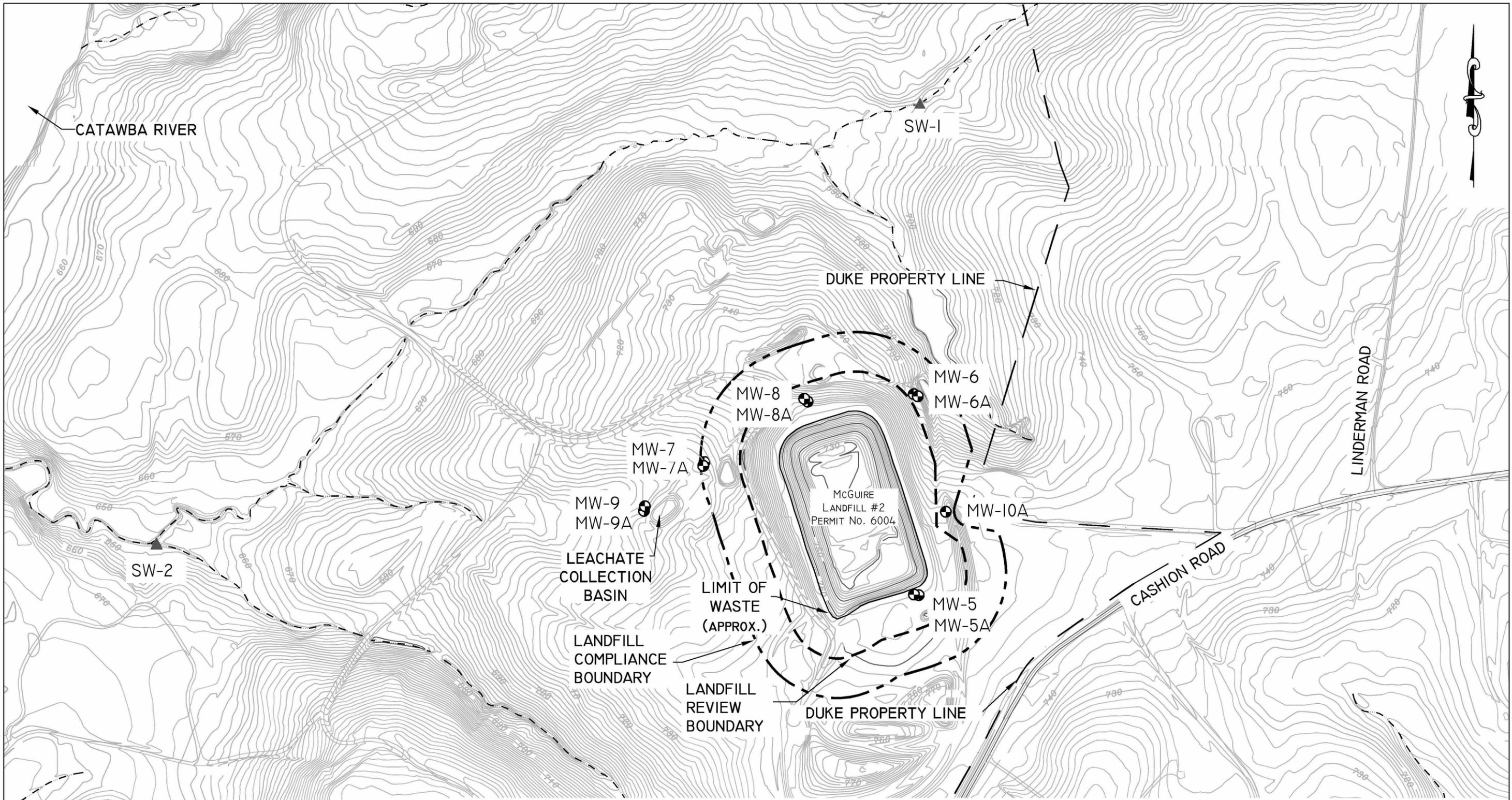


C:\pwworking\tpa\0388545\Site Location Map.dwg



**SITE LOCATION MAP
MCGUIRE NUCLEAR STATION
LANDFILL #2 (SYNTHETICALLY LINED)
PERMIT NO. 6004**

| | |
|--------|---------------|
| DATE | AUG. 28, 2013 |
| FIGURE | 1 |



BASE MAP AND STREAM DATA PROVIDED BY DUKE ENERGY CAROLINAS, LLC.

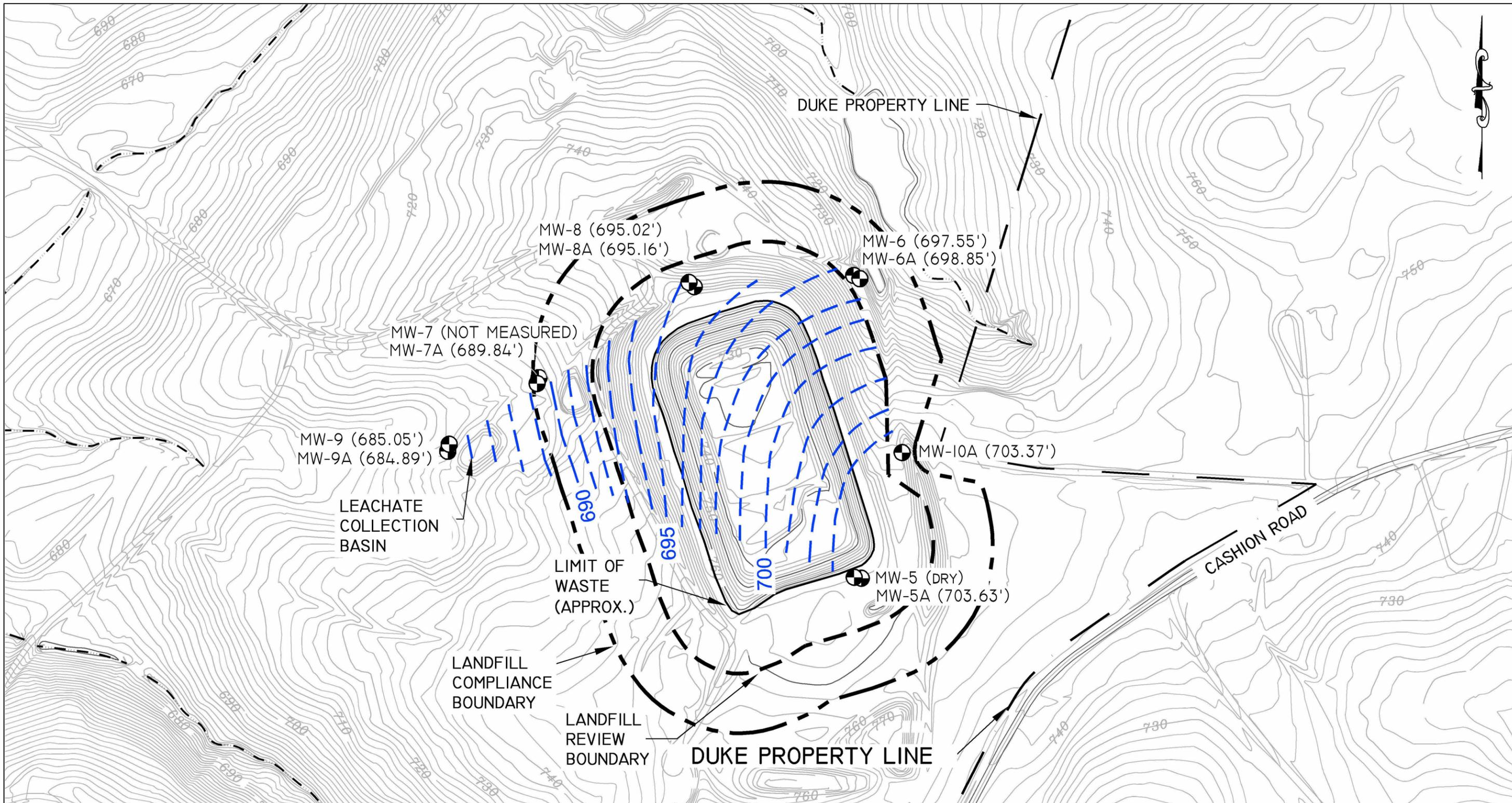
LEGEND

- GROUNDWATER MONITORING WELLS
- SURFACE WATER SAMPLE LOCATION
- APPROXIMATE LIMIT OF WASTE
- LANDFILL REVIEW BOUNDARY
- LANDFILL COMPLIANCE BOUNDARY
- DUKE PROPERTY BOUNDARY
- STREAM



**SAMPLE LOCATIONS
MCGUIRE NUCLEAR STATION
LANDFILL #2 (SYNTHETICALLY LINED)
PERMIT NO. 6004**

| | |
|--------|-----------------|
| DATE | AUGUST 28, 2013 |
| FIGURE | 2 |



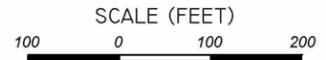
BASE MAP AND STREAM DATA PROVIDED BY DUKE ENERGY CAROLINAS, LLC.

LEGEND

- GROUNDWATER MONITORING WELLS
- MW-9 (685.05')** GROUNDWATER ELEVATION (FEET)
- APPROXIMATE LIMIT OF WASTE
- LANDFILL REVIEW BOUNDARY
- LANDFILL COMPLIANCE BOUNDARY
- DUKE PROPERTY BOUNDARY
- STREAM
- GROUNDWATER SURFACE CONTOUR

NOTE: GROUNDWATER CONTOURS DRAWN FROM SHALLOW WELLS ONLY.

NOTE: GROUNDWATER ELEVATIONS WERE INFERRED AT MONITORING WELLS MW-5 AND MW-7.



GENERALIZED GROUNDWATER SURFACE CONTOURS JUNE 2013
MCGUIRE NUCLEAR STATION
LANDFILL #2 (SYNTHETICALLY LINED)
PERMIT NO. 6004

DATE
AUGUST 28, 2013

FIGURE
3

TABLES

**Table 1–Field Data Parameters
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill #2 (Synthetically Lined) - Permit No. 6004**

| DATE | WELL No. | WELL DEPTH (feet) | DEPTH TO WATER (feet) | WATER ELEV. (feet) | DEPTH TO PRODUCT (feet) | ODOR | Purge METHOD | PUMP RATE (mL/min) | WELL VOLUME (gal) | EVAC VOLUME (gal) | EVAC (yes/no) | TEMP (deg C) | SPECIFIC CONDUCTANCE (umho/cm) | pH (SU) | TURBIDITY (NTU) | ORP (mV-NHE) | DO (mg/L) |
|-----------|---------------|-------------------|-----------------------|--------------------|-------------------------|------|--------------|--------------------|-------------------|-------------------|---------------|--------------|--------------------------------|---------|-----------------|--------------|-----------|
| 6/10/2013 | MW-5 | 63.90 | N/A | N/A | N/A | None | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 6/10/2013 | MW-5A | 96.00 | 64.79 | 703.63 | N/A | None | CP | N/A | 5.09 | 15.75 | NO | 16.54 | 55 | 6.1 | 0.6 | N/A | N/A |
| 6/10/2013 | MW-6 | 37.20 | 30.90 | 697.55 | N/A | None | CP | N/A | 1.03 | 2.00 | YES | 17.74 | 104 | 5.8 | 5.8 | N/A | N/A |
| 6/10/2013 | MW-6A | 47.90 | 30.13 | 698.85 | N/A | None | CP | N/A | 2.90 | 9.00 | NO | 17.06 | 56 | 5.4 | 0.8 | N/A | N/A |
| 6/11/2013 | MW-7 | 37.30 | N/A | N/A | N/A | None | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 6/11/2013 | MW-7A | 59.40 | 34.82 | 689.84 | N/A | None | CP | N/A | 4.01 | 12.75 | NO | 16.50 | 114 | 6.1 | 0.7 | N/A | N/A |
| 6/10/2013 | MW-8 | 71.50 | 64.58 | 695.02 | N/A | None | EOP | N/A | 1.13 | 0.54 | N/A | 17.66 | 146 | 6.4 | 5.0 | N/A | N/A |
| 6/10/2013 | MW-8A | 84.40 | 64.52 | 695.16 | N/A | None | CP | N/A | 3.24 | 9.75 | NO | 16.86 | 94 | 6.5 | 0.7 | N/A | N/A |
| 6/11/2013 | MW-9 | 30.80 | 26.82 | 685.05 | N/A | None | CP | N/A | 0.65 | 3.00 | NO | 20.14 | 121 | 5.6 | 0.7 | N/A | N/A |
| 6/11/2013 | MW-9A | 47.80 | 27.24 | 684.89 | N/A | None | CP | N/A | 3.35 | 10.50 | NO | 17.72 | 103 | 6.1 | 0.5 | N/A | N/A |
| 6/10/2013 | MW-10A | 59.23 | 52.41 | 703.37 | N/A | None | EOP | N/A | 1.11 | 0.46 | N/A | 17.07 | 45 | 5.9 | 5.3 | N/A | N/A |
| 6/11/2013 | SW-1 | N/A | N/A | N/A | N/A | None | N/A | N/A | N/A | N/A | N/A | 20.87 | 114 | 6.5 | 62.7 | N/A | N/A |
| 6/11/2013 | SW-2 | N/A | N/A | N/A | N/A | None | N/A | N/A | N/A | N/A | N/A | 19.73 | 115 | 7.8 | 12.2 | N/A | N/A |
| 6/11/2013 | LEACHATE POND | N/A | N/A | N/A | N/A | None | N/A | N/A | N/A | N/A | N/A | 19.02 | 972 | 7.1 | 7.5 | N/A | N/A |

Notes:

1. Purge Methods; LF=Low Flow, CP=Conventional Purge (3-5 well volumes), NP=No Purge (HydraSleeve), EOP=Equipment Only Purge.
2. Field sampling performed by Duke Energy Carolinas, LLC personnel.
3. There was insufficient water in MW-5 and MW-7 to obtain a depth to water reading or to collect a groundwater sample.
4. umho/cm indicates micromhos per centimeter.
5. SU indicates Standard Units.
6. NTU indicates Nephelometric Turbidity Units.
7. mV-NHE indicates millivolts-Normal Hydrogen Electrode.
8. Information provided by Tim Hunsucker of Duke Energy Carolinas, LLC on July 8, 2013.
9. N/A indicates not applicable.
10. NS indicates no sample.

**Table 2--Groundwater Field and Analytical Results
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill #2 (Synthetically Lined) - Permit No. 6004**

| Parameter | SWS ID | Units | Certificate Code | Monitoring Wells | | | | | | | SWSL | 15A NCAC 2L | | | | | |
|----------------------|-------------|---------|------------------|------------------|------------|------------|------------|------------|-----------|------------|-------|-------------|-------|-------|---------|---------|----|
| | | | | 6004-MW-5 | 6004-MW-5A | 6004-5A QC | 6004-MW-6 | 6004-MW-6A | 6004-MW-7 | 6004-MW-7A | | | | | | | |
| Field pH | 320 | SU | 5193 | NS | 6.1 | | 5.8 | 5.4 | NS | 6.1 | - | 6.5-8.5 | | | | | |
| Specific Conductance | 323 | umho/cm | 5193 | NS | 55 | | 104 | 56 | NS | 114 | - | - | | | | | |
| Temperature | 325 | ° C | 5193 | NS | 16.54 | | 17.74 | 17.06 | NS | 16.50 | - | - | | | | | |
| Top Casing | 328 | feet | - | NS | 768.42 | | 728.45 | 728.98 | NS | 724.66 | - | - | | | | | |
| Depth to Water | 318 | feet | - | - | 64.79 | | 30.90 | 30.13 | - | 34.82 | - | - | | | | | |
| Water Elevation | 427 | feet | - | - | 703.63 | | 697.55 | 698.85 | - | 689.84 | - | - | | | | | |
| Well Depth | 411 | feet | - | 63.90 | 96.00 | | 37.20 | 47.90 | 37.30 | 59.40 | - | - | | | | | |
| Arsenic | 14 | µg/L | 248 | NS | 0.257 | J | NA | 0.078 | U | 0.078 | U | NS | 0.078 | U | 10 | 10 | |
| Barium | 15 | µg/L | 248 | NS | 24.9 | J' | NA | 46.4 | J' | 48.6 | J' | NS | 4.46 | J | 100 | 700 | |
| Cadmium | 34 | µg/L | 248 | NS | 0.101 | U | NA | 0.101 | U | 0.101 | U | NS | 0.101 | U | 1 | 2 | |
| Chloride | 455 | µg/L | 248 | NS | 1,270 | | NA | 10,100 | | 5,270 | | NS | 1,220 | NE | | 250,000 | |
| Chromium | 51 | µg/L | 248 | NS | 1.1 | J | NA | 3.46 | J | 0.888 | J | NS | 1.02 | J | 10 | 10 | |
| Lead | 131 | µg/L | 248 | NS | 0.065 | U | NA | 0.065 | U | 0.065 | U | NS | 0.065 | U | 10 | 15 | |
| Mercury | 132 | µg/L | 248 | NS | 0.033 | U | NA | 0.033 | U | 0.033 | U | NS | 0.033 | U | 0.2 | 1 | |
| Selenium | 183 | µg/L | 248 | NS | 0.347 | J | NA | 0.198 | J | 0.165 | J | NS | 0.324 | J | 10 | 20 | |
| Silver | 184 | µg/L | 248 | NS | 0.7 | U | NA | 0.7 | U | 0.7 | U | NS | 0.7 | U | 10 | 20 | |
| Sulfate | 315 | µg/L | 248 | NS | 3,060 | J' | NA | 321 | J' | 53.4 | J | NS | 385 | J' | 250,000 | 250,000 | |
| TPH DRO | NE | mg/L | 12 | NS | 0.062 | U | 0.062 | U | 0.062 | U | 0.062 | U | NS | 0.062 | U | NE | NE |
| EPA 8260 (VOCs) | SEE NOTE 15 | | | | | | | | | | | | | | | | |

Notes:

- Concentrations presented in micrograms per liter (µg/L), except where noted.
- SWS ID is the Solid Waste Section Identification Number.
- SWSL is the Solid Waste Section Limit. NCDENR defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L .0202 Groundwater Quality Standards, last amended on April 1, 2013.
- Grayed values indicate values that attain or exceed the SWSL Standard.
- Bold values indicate values that attain or exceed the 15A NCAC 2L Standard.
- TPH DRO indicates Total Petroleum Hydrocarbons Diesel Range Organics.
- NE indicates not established. Blank cells indicate that there is no information relevant to the respective row.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations greater than the method detection limit (MDL). "J" is used for parameters detected at estimated concentrations greater than the MDL but less than the laboratory's method reporting limit (MRL). An italicized J-flag is a data qualifier, added by HDR to indicate a detected concentration which attains or is greater than the laboratory's MRL but less than the SWSL.
- Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on July 8, 2013.
- According to the Constituent Look-up webpage on the NCDENR Division of Waste Management webpage, there is no SWSL or 2L Standard for choride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- NS indicates no sample was collected.
- NA indicates not analyzed.
- SU indicates Standard Units.
- No EPA Method 8260 volatile organic compounds (VOCs) were measured above their MDL.

**Table 2–Groundwater Field and Analytical Results
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill #2 (Synthetically Lined) - Permit No. 6004**

| Sample Date: June 10-11, 2013 | | | | Laboratory Certificate Codes: Duke Energy Carolinas Field #5193 Duke Energy Analytical Laboratory #248 Pace Analytical Services, Inc. #12 | | | | | | | | | |
|--|-------------|---------|------------------|--|------------|------------|------------|-------------|------------|-------------|---------|-------------|--|
| Field Sampling performed by Duke Energy, LLC | | | | | | | | | | | | | |
| Parameter | SWS ID | Units | Certificate Code | Monitoring Wells | | | | | Trip Blank | Field Blank | SWSL | 15A NCAC 2L | |
| | | | | 6004-MW-8 | 6004-MW-8A | 6004-MW-9 | 6004-MW-9A | 6004-MW-10A | | | | | |
| Field pH | 320 | SU | 5193 | 6.4 | 6.5 | 5.6 | 6.1 | 5.9 | - | - | - | 6.5-8.5 | |
| Specific Conductance | 323 | umho/cm | 5193 | 146 | 94 | 121 | 103 | 45 | - | - | - | - | |
| Temperature | 325 | °C | 5193 | 17.66 | 16.86 | 20.14 | 17.72 | 17.07 | - | - | - | - | |
| Top Casing | 328 | feet | - | 759.60 | 759.68 | 711.87 | 712.13 | 755.78 | - | - | - | - | |
| Depth to Water | 318 | feet | - | 64.58 | 64.52 | 26.82 | 27.24 | 52.41 | - | - | - | - | |
| Water Elevation | 427 | feet | - | 695.02 | 695.16 | 685.05 | 684.89 | 703.37 | - | - | - | - | |
| Well Depth | 411 | feet | - | 71.50 | 84.40 | 30.80 | 47.80 | 59.23 | - | - | - | - | |
| Arsenic | 14 | µg/L | 248 | 0.137 J | 0.078 U | 0.078 U | 0.078 U | 0.078 U | NA | 0.078 U | 10 | 10 | |
| Barium | 15 | µg/L | 248 | 47 J' | 24.3 J' | 23.4 J' | 9.7 J' | 25.8 J' | NA | 0.154 J | 100 | 700 | |
| Cadmium | 34 | µg/L | 248 | 0.101 U | 0.101 U | 0.101 U | 0.101 U | 0.101 U | NA | 0.101 U | 1 | 2 | |
| Chloride | 455 | µg/L | 248 | 1,380 | 2,010 | 2,020 | 1,440 | 1,360 | NA | 42.8 J | NE | 250,000 | |
| Chromium | 51 | µg/L | 248 | 2.83 J | 0.571 J | 1.62 J | 1.73 J | 1.75 J | NA | 0.5 U | 10 | 10 | |
| Lead | 131 | µg/L | 248 | 0.407 J | 0.065 U | 0.065 U | 0.065 U | 0.116 J | NA | 0.065 U | 10 | 15 | |
| Mercury | 132 | µg/L | 248 | 0.033 U | 0.033 U | 0.033 U | 0.033 U | 0.033 U | NA | 0.033 U | 0.2 | 1 | |
| Selenium | 183 | µg/L | 248 | 0.295 J | 0.291 J | 0.179 J | 0.238 J | 0.37 J | NA | 0.209 J | 10 | 20 | |
| Silver | 184 | µg/L | 248 | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | NA | 0.7 U | 10 | 20 | |
| Sulfate | 315 | µg/L | 248 | 717 J' | 1,130 J' | 107 J' | 225 J' | 590 J' | NA | 18 U | 250,000 | 250,000 | |
| TPH DRO | NE | mg/L | 12 | 0.062 U | 0.062 U | 0.062 U | 0.062 U | 0.062 U | NA | 0.062 U | NE | NE | |
| EPA 8260 (VOCs) | SEE NOTE 15 | | | | | | | | | | | | |

Notes:

- Concentrations presented in micrograms per liter (µg/L), except where noted.
- SWS ID is the Solid Waste Section Identification Number.
- SWSL is the Solid Waste Section Limit. NCDENR defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L .0202 Groundwater Quality Standards, last amended on April 1, 2013.
- Grayed values indicate values that attain or exceed the SWSL Standard.
- Bold values indicate values that attain or exceed the 15A NCAC 2L Standard.
- TPH DRO indicates Total Petroleum Hydrocarbons Diesel Range Organics.
- NE indicates not established. Blank cells indicate that there is no information relevant to the respective row.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations greater than the method detection limit (MDL). "J" is used for parameters detected at estimated concentrations greater than the MDL but less than the laboratory's method reporting limit (MRL). An italicized J'-flag is a data qualifier, added by HDR to indicate a detected concentration which attains or is greater than the laboratory's MRL but less than the SWSL.
- Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on July 8, 2013.
- According to the Constituent Look-up webpage on the NCDENR Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- NS indicates no sample was collected.
- NA indicates not analyzed.
- SU indicates Standard Units.
- No EPA Method 8260 volatile organic compounds (VOCs) were measured above their MDL.

**Table 3—Surface Water Field and Analytical Results
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill #2 (Synthetically Lined) - Permit No. 6004**

| Sample Date: June 10-11, 2013 | | | | Laboratory Certificate Codes: Duke Energy Carolinas Field #5193 Duke Energy Analytical Laboratory #248 Pace Analytical Services, Inc. #12 | | | |
|--|-------------|---------|------------------|--|-----------|---------|-------------|
| Field Sampling performed by Duke Energy Carolinas, LLC | | | | | | | |
| Parameter | SWS ID | Units | Certificate Code | Surface Water Sampling Locations | | SWSL | 15A NCAC 2B |
| | | | | 6004-SW-1 | 6004-SW-2 | | |
| Field pH | 320 | SU | 5193 | 6.5 | 7.8 | - | 6.0-9.0 |
| Specific Conductance | 323 | umho/cm | 5193 | 114 | 115 | - | - |
| Temperature | 325 | °C | 5193 | 20.87 | 19.73 | - | - |
| Arsenic | 14 | µg/L | 248 | 0.539 J | 0.16 J | 10 | 10 |
| Barium | 15 | µg/L | 248 | 43.7 J' | 22.8 J' | 100 | 1,000 |
| Cadmium | 34 | µg/L | 248 | 0.101 U | 0.101 U | 1 | 2.0 |
| Chloride | 455 | µg/L | 248 | 1,770 | 2,150 | NE | 230,000 |
| Chromium | 51 | µg/L | 248 | 0.662 J | 0.5 U | 10 | 50 |
| Lead | 131 | µg/L | 248 | 0.346 J | 0.149 J | 10 | 25 |
| Mercury | 132 | µg/L | 248 | 0.033 U | 0.033 U | 0.2 | 0.012 |
| Selenium | 183 | µg/L | 248 | 0.456 J | 0.381 J | 10 | 5 |
| Silver | 184 | µg/L | 248 | 0.7 U | 0.7 U | 10 | 0.06 |
| Sulfate | 315 | µg/L | 248 | 988 J' | 2,360 J' | 250,000 | 250,000 |
| TPH DRO | NE | mg/L | 12 | 0.062 U | 0.062 U | NE | NE |
| EPA 8260 (VOCs) | SEE NOTE 14 | | | | | | |

Notes:

- Concentrations presented in micrograms per liter (µg/L), except where noted.
- SWS ID is the Solid Waste Section Identification Number.
- SWSL is the Solid Waste Section Limit. NCDENR defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2B Standard is from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2B - Surface Water and Wetland Standards," (last amended on May 1, 2007) for Class WS-IV water.
- The unnamed tributary to the Catawba River is classified as WS-IV waters. Regulation 15A NCAC 02B .0216 provides water quality standards for WS-IV waters. Class C water quality standards also apply to WS-IV waters. Class C water quality standards are provided in regulation 15A NCAC 02B .0211. For parameters and constituents where standards exist for both classes, the more stringent is listed as the 2B Standard. Reference 15A NCAC 2B .0200 Classifications and Water Quality Standards Applicable to Surface Waters and Wetlands of N.C. Amended Effective: May 1, 2007.
- Grayed values indicate values that attain or exceed the SWSL Standard.
- Bold values indicate values that attain or exceed the 15A NCAC 2B Standard.
- TPH DRO indicates Total Petroleum Hydrocarbons Diesel Range Organics.
- NE means not established. Blank cells indicate that there is no information relevant to the respective row.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations greater than the method detection limit (MDL). "J" is used for parameters detected at estimated concentrations greater than the MDL but less than the laboratory's method reporting limit (MRL). An italicized J'-flag is a data qualifier, added by HDR, to indicate a detected concentration attains or is greater than the laboratory's MRL but less than the SWSL.
- Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on July 8, 2013.
- According to the Constituent Look-up webpage on the NCDENR Division of Waste Management webpage, there is no SWSL for choride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL listed is for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- SU indicates Standard Units.
- No EPA Method 8260 volatile organic compounds (VOCs) were measured above their MDL.

**Table 4–Leachate Sample Field and Analytical Results
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill #2 (Synthetically Lined) - Permit No. 6004**

| Sample Date: June 10-11, 2013 | | | Laboratory Certificate Codes: | | |
|--|-------------|---------|--|--------------------|---------|
| | | | Duke Energy Carolinas Field #5193 | | |
| | | | Duke Energy Analytical Laboratory #248 | | |
| Field Sampling performed by Duke Energy, LLC | | | Pace Analytical Services, Inc. #12 | | |
| Parameter | SWS ID | Units | Certificate Code | 6004-Leachate Pond | SWSL |
| Field pH | 320 | SU | 5193 | 7.1 | - |
| Specific Conductance | 323 | umho/cm | 5193 | 972 | - |
| Temperature | 325 | °C | 5193 | 19.02 | - |
| Arsenic | 14 | µg/L | 248 | 0.581 J | 10 |
| Barium | 15 | µg/L | 248 | 70.4 J' | 100 |
| Cadmium | 34 | µg/L | 248 | 0.101 U | 1 |
| Chloride | 455 | µg/L | 248 | 40,000 | NE |
| Chromium | 51 | µg/L | 248 | 0.5 U | 10 |
| Lead | 131 | µg/L | 248 | 0.089 J | 10 |
| Mercury | 132 | µg/L | 248 | 0.033 U | 0.2 |
| Selenium | 183 | µg/L | 248 | 0.66 J | 10 |
| Silver | 184 | µg/L | 248 | 0.7 U | 10 |
| Sulfate | 315 | µg/L | 248 | 134,000 J' | 250,000 |
| TPH DRO | NE | mg/L | 12 | 1.3 | NE |
| EPA 8260 (VOCs) | SEE NOTE 11 | | | | |

Notes:

- Concentrations presented in micrograms per liter (µg/L), except where noted.
- SWS ID is the Solid Waste Section Identification Number.
- SWSL is the Solid Waste Section Limit. NCDENR defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- Grayed values indicate values that attain or exceed the SWSL Standard.
- TPH DRO indicates Total Petroleum Hydrocarbons Diesel Range Organics.
- NE indicates not established. Blank cells indicate that there is no information relevant to the respective row.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations greater than the method detection limit (MDL).
"J" is used for parameters detected at estimated concentrations above the MDL but less than the laboratory's method reporting limit (MRL).
An italicized J'-flag is a data qualifier, added by HDR, to indicate a detected concentration that attains or is greater than the laboratory's MRL but less than the SWSL.
- Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on July 8, 2013.
- According to the Constituent Look-up webpage on the NCDENR Division of Waste Management webpage, there is no SWSL for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL listed is for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- SU indicates Standard Units.
- No EPA Method 8260 volatile organic compounds (VOCs) were measured above their MDL.

**Table 5--Field and Analytical Results that Equal or Exceed
NCAC 2L Groundwater Quality Standards
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill #2 (Synthetically Lined) - Permit No. 6004**

| Sample Date: June 10-11, 2013 | | | | | | |
|-------------------------------|---------|--------|-------|-------------------------|---------------------------|---|
| Parameter | Well ID | Result | Units | 15A NCAC 2L Standard | Historical Concentrations | Cause and Significance |
| pH | MW-5A | 6.1 | SU | 6.5 - 8.5 | 5.0 - 6.8 | MW-5A is considered one of the background wells for the site. pH is consistent with historical readings at MW-5A. |
| | MW-6 | 5.8 | | | 5.6 - 6.3 | pH is consistent with historical readings at MW-6. |
| | MW-6A | 5.4 | | | 5.1 - 6.0 | pH is consistent with historical readings at MW-6A. |
| | MW-7A | 6.1 | | | 6.1 - 7.6 | pH is consistent with the lowest historical reading at MW-7A. |
| | MW-8 | 6.4 | | | 6.0 - 7.0 | pH is consistent with historical readings at MW-8. |
| | MW-8A | 6.5 | | | 6.4 - 7.2 | pH is consistent with historical readings at MW-8A. |
| | MW-9 | 5.6 | | | 4.8 - 6.2 | pH is consistent with historical readings at MW-9. |
| | MW-9A | 6.1 | | | 5.8 - 6.7 | pH is consistent with historical readings at MW-9A. |
| | MW-10A | 5.9 | | | 4.9 - 6.0 | pH is consistent with historical readings at MW-10A. |

Notes:

1. 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L .0202 Groundwater Quality Standards, last amended on April 1, 2013.
2. Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on July 8, 2013.
3. SU indicates Standard Units.
4. Historical concentrations based on data in Duke Energy Carolinas, LLC analytical results database.

**Table 6—Radiological Analytical Results
Duke Energy Carolinas, LLC/McGuire Nuclear Station
Landfill # 2 (Synthetically Lined) - Permit No. 6004**

| Sample Date: June 10-11, 2013 | | | | | | | | | | | | | | Laboratory Certificate Codes: Duke Energy Analytical Laboratory #248 | | |
|--|-------|------------------|--------------------------------|-------|--------|---------|------|--------|----------|----------|---------|---------|--------|---|---------|---------|
| Field Sampling Performed by Duke Energy Carolinas, LLC | | | | | | | | | | | | | | | | |
| Parameter | Units | Certificate Code | Monitoring Well Identification | | | | | | | | | | | Leachate Pond | SW-1 | SW-2 |
| | | | MW-5 | MW-5A | MW-6 | MW-6A | MW-7 | MW-7A | MW-8 | MW-8A | MW-9 | MW-9A | MW-10A | | | |
| Gross Alpha | pCi/L | 248 | NS | 0.311 | <0.154 | 1.52 | NS | 1.15 | <-0.0067 | <-0.0032 | <0.168 | <-0.055 | 0.293 | <-1.10 | <-0.061 | <-0.063 |
| BaLa-140 | pCi/L | 248 | NS | <5.90 | <8.10 | <9.80 | NS | <5.18 | <7.02 | <9.41 | <6.22 | <6.02 | <7.07 | <7.70 | <2.88 | <9.32 |
| Be-7 | pCi/L | 248 | NS | <39.9 | <43.4 | <56.0 | NS | 35.6 | <49.1 | <44.3 | <37.5 | <43.7 | <52.4 | <45.4 | <22.1 | <58.1 |
| Gross Beta | pCi/L | 248 | NS | 1.21 | <0.474 | <-0.028 | NS | <0.145 | 1.17 | <0.584 | <-0.037 | <0.139 | 1.07 | 14.7 | 1.17 | 1.66 |
| Co-58 | pCi/L | 248 | NS | <4.58 | <4.63 | <4.58 | NS | <4.83 | <5.73 | <4.46 | <5.16 | <4.43 | <5.15 | <5.68 | <2.08 | <7.49 |
| Co-60 | pCi/L | 248 | NS | <6.99 | <7.53 | <7.07 | NS | <7.34 | <5.87 | <9.69 | <6.87 | <5.50 | <6.49 | <6.90 | <2.45 | <6.25 |
| Cs-134 | pCi/L | 248 | NS | <4.52 | <4.97 | <6.13 | NS | <4.52 | <4.72 | <7.57 | <5.02 | <5.04 | <6.02 | <4.01 | <1.79 | <6.72 |
| Cs-137 | pCi/L | 248 | NS | <3.80 | <5.31 | <5.18 | NS | <4.66 | <6.87 | <7.19 | <5.83 | <4.96 | <5.42 | <5.59 | <2.44 | <8.08 |
| Fe-59 | pCi/L | 248 | NS | <6.89 | <12.0 | <12.0 | NS | <8.91 | <13.4 | <16.5 | <6.45 | <9.59 | <10.7 | <9.54 | <4.92 | <9.60 |
| H3GW (Tritium) | pCi/L | 248 | NS | <45.0 | <38.0 | <119 | NS | <26.0 | <100 | <170 | <69.8 | <42.0 | <128 | 1,000 | <92.0 | <100 |
| I-131 | pCi/L | 248 | NS | <6.58 | <6.54 | <6.90 | NS | <4.39 | <6.49 | <6.36 | <4.74 | <4.99 | <6.33 | <5.21 | <2.68 | <5.64 |
| K-40 | pCi/L | 248 | NS | 61.2 | <125 | <108 | NS | 48.0 | 212 | 73.2 | 102 | <80.6 | 146 | 201 | 154 | <113 |
| Mn-54 | pCi/L | 248 | NS | <4.32 | <5.61 | <6.30 | NS | <4.62 | <5.39 | <3.92 | <4.98 | <5.45 | <4.29 | <5.69 | <2.17 | <8.19 |
| Nb-95 | pCi/L | 248 | NS | <4.26 | <5.50 | <7.20 | NS | <4.80 | <5.25 | <8.18 | <4.74 | <4.49 | <5.62 | <5.89 | <2.41 | <5.99 |
| Zn-65 | pCi/L | 248 | NS | <12.6 | <11.1 | <14.0 | NS | <9.61 | <10.5 | <16.8 | <10.6 | <12.0 | <13.4 | <10.4 | <5.43 | <13.8 |
| Zr-95 | pCi/L | 248 | NS | <8.90 | <8.75 | <8.41 | NS | <8.16 | <10.0 | <8.53 | <9.00 | <8.26 | <8.95 | <8.86 | <4.06 | <9.80 |

Notes:

1. Concentrations presented in picocuries per liter (pCi/L).
2. There was insufficient water in MW-5 and MW-7 to obtain a groundwater sample.
3. NS indicates no sample was collected.
4. Data obtained from EnRad Laboratory Report Job: MCGUIRE_28MAY2013_A MNS LANDFILL 2 provided by Tim Hunsucker of Duke Energy Carolinas on July 16, 2013.

APPENDICES

APPENDIX A
CHAIN-OF-CUSTODY FORMS

92101155



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy Analytical Lab Services

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(980) 875-5245
Fax: (980) 875-5038

For Detailed Instructions, see:
<http://dewwww/essenv/cocl>

Analytical Laboratory Use Only

LIMS # **J13060076** MATRIX: GW-RCRA

Logged By *[Signature]* Date & Time **6/11/13 1310**

PO # **PACE** Cooler Temp (C) **2.5**

PO #146146

MR #

19 Preserv.: 1=HCL
2=H₂SO₄ 3=HNO₃
4=Ice 5=None

1, 4

1, 4

3

4

3

4

19 Page 1 of 1
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

Revised 5/14/13

1) Project Name **MNS LANDFILL 2** 2) Phone No: 980-875-5257
Permit # 60-04

3) Client **C. Campbell / T Hunsucker** 4) Fax No: 875-4349

5) Business Unit: 20036 6) Process: **BLDFLGN** 7) Resp. To: **MC00**

8) Project ID: 9) Activity ID: 10) Mail Code: **MGO3A3**

Customer to complete all appropriate NON-SHADED areas.

LAB USE ONLY

11 Lab ID

| |
|------------|
| 2013012791 |
| 2013012792 |
| 2013012793 |
| 2013012794 |
| 2013012795 |
| 2013012796 |
| 2013012797 |
| 2013012798 |
| 2013012799 |
| 2013012800 |
| 2013012801 |
| 2013012802 |
| 2013012803 |
| 2013012804 |
| 2013012805 |
| 2013012806 |
| 2013012807 |

14 Collection Information

| 13 Sample Description or ID | Date | Time | Signature | 16 ANALYSES REQUIRED | | F_Aik (4.5), SO ₄ , Cl (IC) | Metals Prep - TRM | Chlorine (ppm) | 20 Total # of Containers | |
|----------------------------------|--------------------|---------------|---------------|----------------------|--|--|---|----------------|--------------------------|--------------|
| | | | | 17 Grab | VOC's (EPA8260) (See Attached List) PACE | | | | | |
| TRIP BLANK | 6/10/13 | 0620 | WC | X | 3 | | (ICP-EPA-200.7) Ag, Ba, Ca, Cr, K, Mg, Na (7) | | n/a | 3 |
| MW-5 - NO SAMPLE - WC | 6/10/13 | WC | WC | X | 3 | | Hg (7470) (1) | | 1 | 6 |
| MW-5A | 6/10/13 | 0910 | WC | X | 3 | 1 | (IMS-EPA-200.8) As, Cd, Pb, Se (4) | | 1 | 6 |
| MW-6 | 6/10/13 | 1215 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-6A | 6/10/13 | 1240 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-7 - NO SAMPLE - WC | 6/10/13 | WC | WC | X | 3 | | | | 1 | 6 |
| MW-7A | 6/11/13 | 0730 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-8 | 6/10/13 | 1330 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-8A | 6/10/13 | 1410 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-9 | 6/11/13 | 0910 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-9A | 6/11/13 | 0920 | WC | X | 3 | 1 | | | 1 | 6 |
| MW-10A | 6/10/13 | 1030 | WC | X | 3 | 1 | | | 1 | 6 |
| SW-1 | 6/11/13 | 1045 | WC | X | 3 | 1 | | | 1 | 6 |
| SW-2 | 6/11/13 | 1015 | WC | X | 3 | 1 | | | 1 | 6 |
| LEACHATE POND | 6/11/13 | 0800 | WC | X | 3 | 1 | | | 1 | 6 |
| QC - WELL # MW-5A | 6/10/13 | 0910 | WC | X | 3 | 1 | | | 1 | 1 |
| FIELD BLANK | 6/11/13 | 1120 | WC | X | 3 | 1 | | | 1 | 6 |

Customer to complete appropriate columns to right

Customer to sign & date below

21 Relinquished By *[Signature]* Date/Time **6/11/13 0400** Accepted By *[Signature]* Date/Time **6/11/13 1250**

Relinquished By *[Signature]* Date/Time **6/11/13 1250** Accepted By *[Signature]* Date/Time

Relinquished By *[Signature]* Date/Time **6-12-13 1440** Accepted By *[Signature]* Date/Time **6-12-13 14:40**

23 Sealed/Opened By *[Signature]* Date/Time **6-12-13 15:20** Sealed/Lock Opened By *[Signature]* Date/Time **6/12/13 1520**

24 Comments **Regulatory Agency: NCDENR/DWM -SW Section - State EDD Format Required / Permit # 60-04 Use indicated or comparable analytical methods**
MW-5 INSUFFICIENT VOL TO COLLECT SAMPLES
MW-7 WAS DRY - NO SAMPLE

22 Requested Turnaround

14 Days

7 Days

48 Hr

Other **6/24/13**

* Add. Cost Will Apply

Customer must Complete Page 68 of 69

0.2

