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):

Altamont Environmental, Inc. (Consultant)

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

Name: Andrew Moore Phone: (828) 281-3350

E-mail: amoore@altamontenvironmental.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Duke Energy Carolinas, LLC Marshall Steam Station Dry Ash Landfill	8320 East NC Highway 150 Terrell, NC 28682	1804	.0500	August 8, 2011

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

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

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Stuart A. Ryman P.G. (828) 281-3350

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

Affix NC Licensed/ Professional Geologist Seal

Signature 11-2-11 Date

231 Haywood Street Asheville, NC 28801

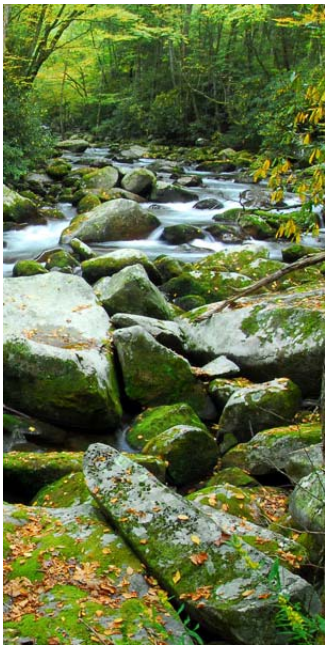
Facility Representative Address

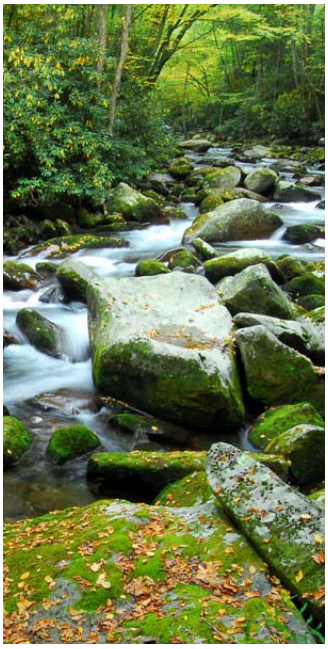
C-2185

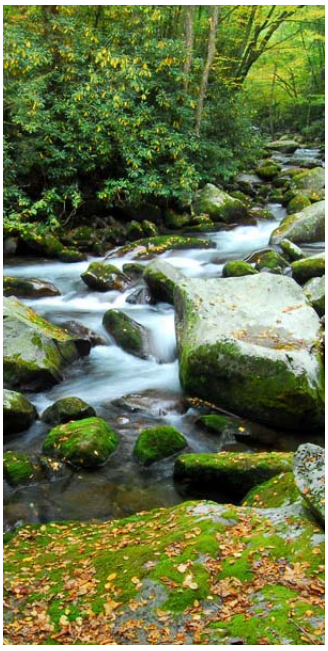
NC PE Firm License Number (if applicable effective May 1, 2009)

NORTH CAROLINA LICENSED SEAL 1654 GEOLOGIST STUART A. RYMAN

Revised 6/2009







ALTAMONT ENVIRONMENTAL, INC.

ENGINEERING & HYDROGEOLOGY

Semiannual Groundwater Monitoring Report

Marshall Steam Station

Dry Ash Landfill, Permit No. 1804

August 2011 Sampling Event

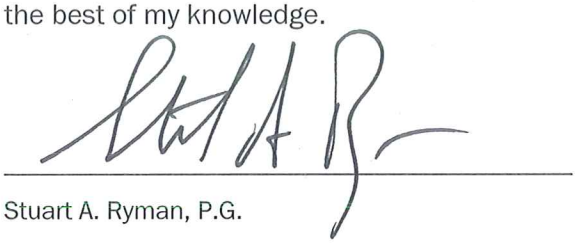
November 2, 2011

Prepared for
Duke Energy Carolinas, LLC
8320 East NC Highway 150
Terrell, NC 28682
Project Number 2369.06

Prepared by
Altamont Environmental, Inc.
231 Haywood Street
Asheville, NC 28801
(828) 281-3350

Professional Certification

On behalf of Altamont Environmental, Inc., a firm licensed to practice both engineering (certification number C-2185) and geology (certification number C-299) in the State of North Carolina, I do hereby certify that the information contained in this report is correct and accurate to the best of my knowledge.



Stuart A. Ryman, P.G.

Table of Contents

1.0 Background

Marshall Steam Station is owned and operated by Duke Energy Carolinas, LLC (Duke). The Marshall plant has a generating capacity of 2090 megawatts (MW) of electric power by combustion of coal. Marshall is the second-largest coal facility owned by Duke. The Marshall station generates enough electricity to power over one-and-a-half million homes.

The plant is located in Catawba County, on Lake Norman (Figure 1), and is in the Piedmont physiographic region. The subsurface conditions in the plant area consist of residual soils and partially weathered rock, which have been formed by the in-place weathering of the parent rock. These material are underlain by bedrock.

Two ash landfills are permitted at the Marshall Steam Station under the North Carolina Department of Environment and Natural Resources (DENR) Solid Waste Permit No. 1804. The ash landfill areas are located north and east of the steam station and are located adjacent to the Marshall Ash Basin. The location of the landfill areas is shown on Figure 1. The larger of the two ash landfills has an area of approximately 47 acres. The smaller of the two ash landfills is approximately 14.5 acres in area.

The groundwater monitoring system at the landfill consists of five groundwater monitoring wells as listed below.

Monitoring Wells:	MW-1
	MW-2
	MW-3
	MW-4
	MW-5

The locations of the wells are shown on Figure 2. Monitoring wells MW-2, MW-3, and MW-5 are located adjacent to the larger ash landfill. Monitoring well MW-1 is located adjacent to the smaller ash landfill. Monitoring well MW-4 is located upgradient from the 47-acre landfill and is described in the *Post-Closure Ground-Water Monitoring Program Sampling and Analysis Plan*[1] as representing upgradient groundwater quality. An observation well, OB-1, is located adjacent to the smaller fill and is used only to measure groundwater levels. All of the groundwater monitoring wells are screened to monitor the shallow aquifer.

The ground surface in the area of the landfill slopes from the elevation along Island Point Road (located north of MW-4, approximate elevation 880 feet to 890 feet), downward toward the Marshall Ash Basin, with a surface water elevation of approximately 790 feet. Lake Norman is located to the east of the Marshall Ash Basin. The normal pond elevation of Lake Norman is 760 feet.

[1] Marshall Steam Station Industrial Landfill-Phase II Permit #18-04 *Post-Closure Ground-Water Monitoring Program Sampling and Analysis Plan*. Dated September 20, 1999.

2.0 Methods

2.1 Sampling and Analysis Methods

Groundwater sampling and documentation of sampling activities were performed by Duke personnel. The groundwater samples were analyzed by Duke Energy Analytical Laboratory (North Carolina Laboratory Certification #248), Pace Analytical Services, Inc., Asheville (North Carolina Laboratory Certification #40), and Summit Environmental Technologies, Inc. (North Carolina Laboratory Certification #631).

The groundwater samples were analyzed for the following constituents and/or parameters:

- Select metals using U.S. Environmental Protection Agency (EPA) Method 200.7 and 200.8
- Mercury using EPA Method 245.1
- Total Dissolved Solids using Standard Method (SM) 2540C
- Chloride, fluoride, nitrate as nitrogen, and sulfate using EPA Method 300.0
- Biological oxygen demand using SM 5210B
- Chemical oxygen demand using EPA Method 410.1
- Total organic carbon using SM 5310C/EPA 9060A
- Total organic halide using EPA Method 9020

2.2 Statement of Work

Altamont Environmental Inc. (Altamont) completed the following tasks:

- Received field sampling information provided by Duke (performed by Duke personnel) for monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5. The samples were collected on August 8, 2011 and Altamont received the data on August 31, 2011.
- Reviewed the laboratory analytical results for samples. The Electronic Data Deliverable (EDD), provided by Duke, was adapted to conform to the format requirements of the DENR EDD template. Altamont added an italicized J data qualifier (*J*) to indicate a detected concentration that is greater than the laboratory's method reporting limit (MRL), but lower than the Solid Waste Section Limit (SWSL). A copy of the original EDD is retained in Altamont's files.
- Developed a generalized groundwater surface contour map using map data and groundwater elevation data supplied by Duke.
- Prepared and submitted this Semiannual Groundwater Monitoring Report to Duke and to DENR.

3.0 Results

3.1 Site Groundwater Flow

Generalized groundwater surface contours for the site are shown on Figure 3. These contours were developed using the measured groundwater elevations in the wells from the August 8, 2011 sampling, and using the approximate surface water elevations for the Marshall Ash Basin and the adjacent Lake Norman.

Groundwater flow at the site is from areas of higher topography toward the ash basin and on toward Lake Norman. Well MW-4 is located north of the landfill and is at the highest topographic elevation. Groundwater flow is generally from MW-4 toward the 47-acre landfill and to the ash basin. It is expected that flow would be from the topographically higher region north of MW-3 and MW-5 toward the landfill, or in the case of MW-5, toward the portion of ash basin located to the east of the landfill.

Well MW-2 is located approximately 200 feet from the shore of the ash basin. Based on the location of the well and the observed water levels in the well relative to the ash basin pond elevation, the well is likely influenced more by the ash basin than from groundwater flowing from the landfill.

The water elevation at well MW-3 is approximately the same as the pond elevation of the two adjacent ponded areas. These ponded areas are part of the ash basin that was cut off from the remainder of the ash basin by construction of the landfill.

Well MW-5 is located adjacent to the landfill and is adjacent to an arm that was a part of the ash basin. This arm no longer contains appreciable free water and is filled with ash that was sluiced from the ash basin.

The groundwater flow in the region near the smaller fill area (14.5-acre landfill) appears to be from the ash basin (elevation 790 feet) toward the arm of Lake Norman (elevation 760 feet) located east of wells OB-1 and MW-1.

3.2 Analytical Results

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

The results of the field and laboratory analyses are summarized in Table 2.

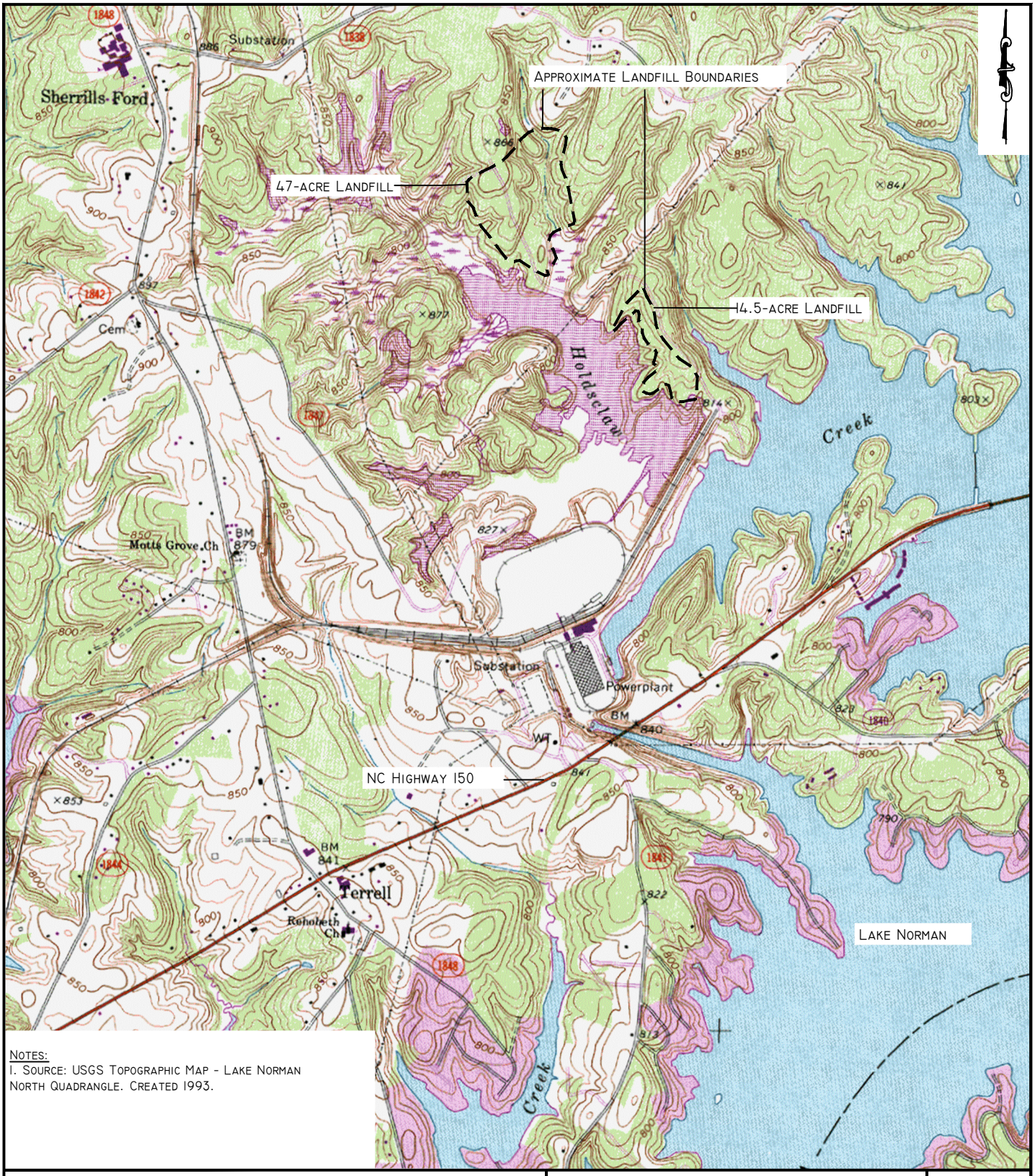
A summary of the Title 15A, North Carolina Administrative Code (NCAC), Subchapter 2L standards (2L standards) exceedances and a preliminary analysis of the cause and significance of the exceedances are presented in Table 3.

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

In addition to the constituents listed in Table 3, the groundwater analytical results for the constituents at the following wells were equal to or above the corresponding SWSL:

- Barium in MW-3
- Zinc in MW-3

FIGURES



Notes:
1. Source: USGS Topographic Map - Lake Norman North Quadrangle. Created 1993.

Altamont Environmental, Inc.
Engineering & Hydrogeology
231 Haywood Street, Asheville, NC 28801
Tel. 828.281.3350 Fax. 828.281.3351
www.altamontenvironmental.com

Site Location Map

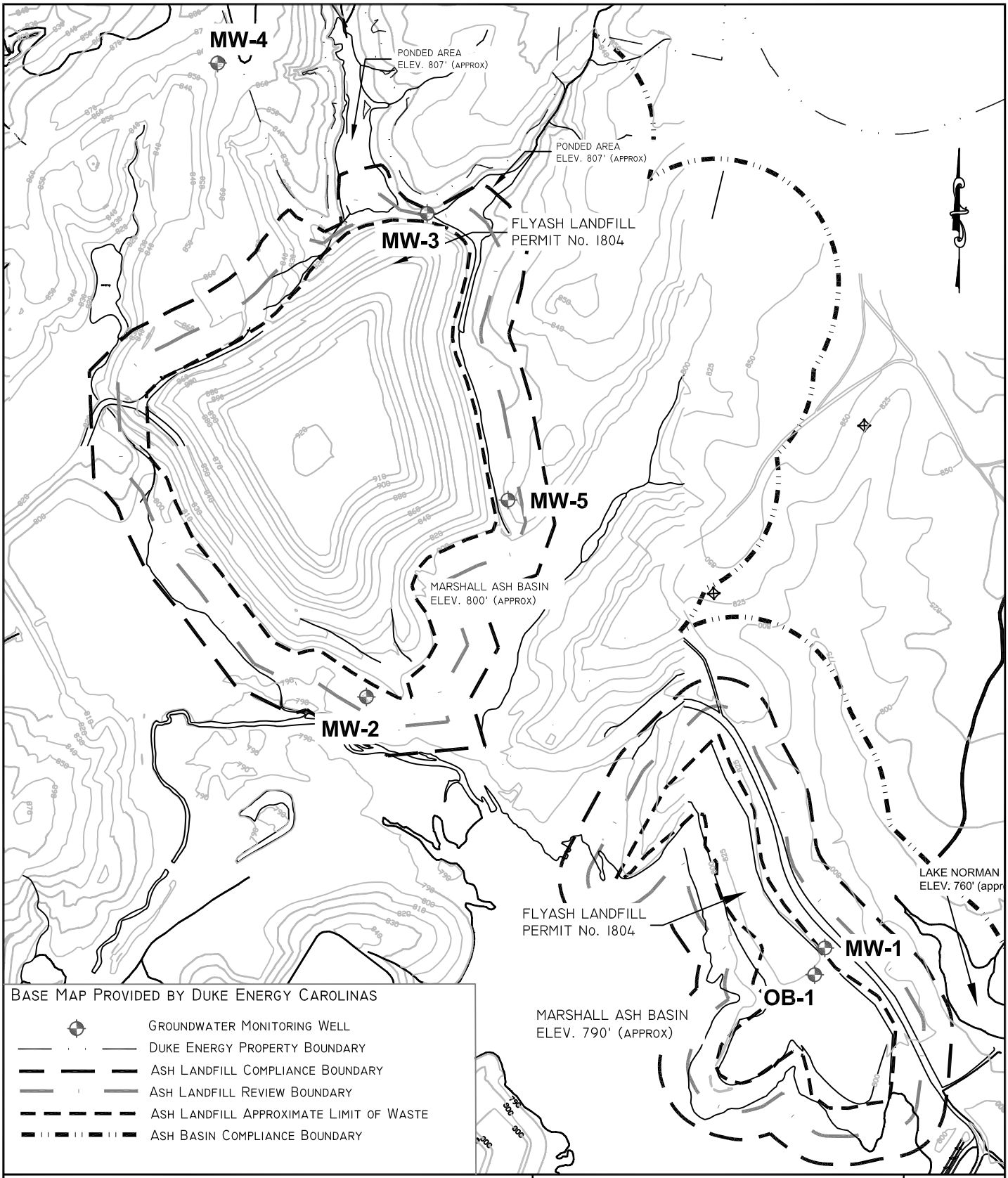
Marshall Steam Station
Dry Ash Landfill Permit No. 1804

Figure 1

Drawn by: Andrew Moore
Project Manager: William M. Miller
Client: Duke Energy Carolinas, LLC
Date: 10/10/11

Scale (feet)
1000 0 1000 2000

File Path: P:\Duke-LF Groundwater Reports-2369\2369.05 MSS Ash LF\Figures\Site Location Map



ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAC.828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

SAMPLE LOCATIONS

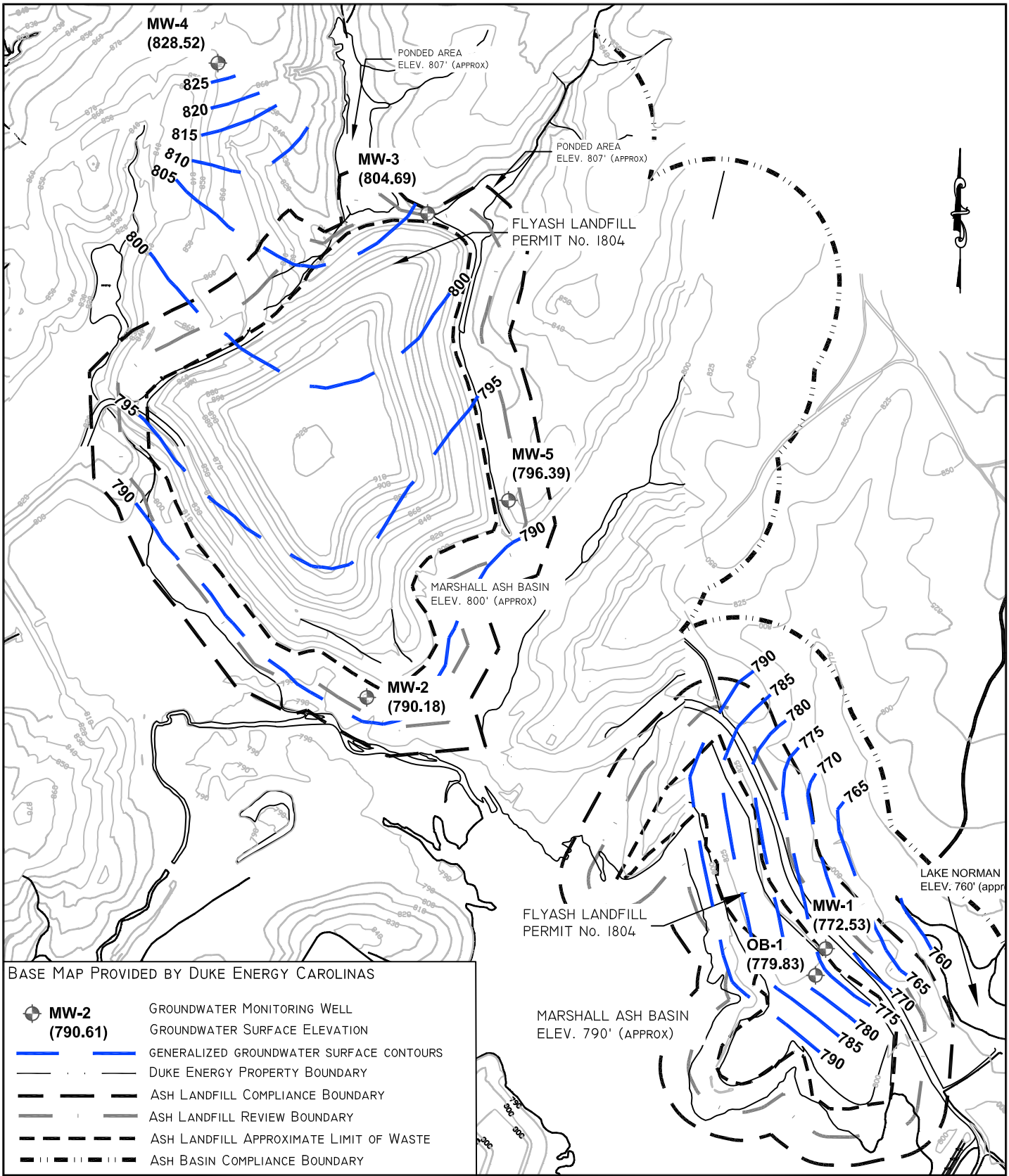
MARSHALL STEAM STATION
DRY ASH LANDFILL PERMIT No. 1804

FIGURE
2

DRAWN BY: ANDREW MOORE
PROJECT MANAGER: WILLIAM M. MILLER
CLIENT: DUKE ENERGY CAROLINAS, LLC
DATE: 10/10/11

SCALE (FEET)
300 0 300 600

FILE PATH: P:\DUKE-LF GROUNDWATER REPORTS-2369\2369.05 MSS ASH LF\2011\AUGUST SAMPLING\FIGURES\MARSHALL ASH LANDFILL



BASE MAP PROVIDED BY DUKE ENERGY CAROLINAS

MW-2 (790.61)	GROUNDWATER MONITORING WELL GROUNDWATER SURFACE ELEVATION
	GENERALIZED GROUNDWATER SURFACE CONTOURS
	DUKE ENERGY PROPERTY BOUNDARY
	ASH LANDFILL COMPLIANCE BOUNDARY
	ASH LANDFILL REVIEW BOUNDARY
	ASH LANDFILL APPROXIMATE LIMIT OF WASTE
	ASH BASIN COMPLIANCE BOUNDARY

ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAC.828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

GENERALIZED GROUNDWATER SURFACE CONTOURS

AUGUST 8, 2011
MARSHALL STEAM STATION
DRY ASH LANDFILL PERMIT No. 1804

FIGURE 3

DRAWN BY: ANDREW MOORE
PROJECT MANAGER: WILLIAM M. MILLER
CLIENT: DUKE ENERGY CAROLINAS, LLC
DATE: 10/10/11

SCALE (FEET)
300 0 300 600

FILE PATH: P:\DUKE-LF GROUNDWATER REPORTS-2369\2369.05 MSS ASH LF\2011\AUGUST SAMPLING\FIGURES\MARSHALL ASH LANDFILL

TABLES

Table 1 - Field Data Parameters
Duke Energy Carolinas, LLC/Marshall Steam Station
Dry Ash Landfill - Permit No. 1804
Groundwater Monitoring Report

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)
8/8/2011	MW-1	78.75	51.17	772.53	N/A	N/A	CP	N/A	4.50	13.50	NO	16.6	134	5.6	2.1	N/A	N/A
8/8/2011	MW-2	35.10	7.04	790.18	N/A	N/A	CP	N/A	4.58	14.25	NO	16.7	381	5.2	1.3	N/A	N/A
8/8/2011	MW-3	28.15	8.38	804.69	N/A	N/A	CP	N/A	3.22	10.50	NO	16.4	100	4.8	9.9	N/A	N/A
8/8/2011	MW-4	50.20	38.86	828.52	N/A	N/A	CP	N/A	1.85	2.50	YES	18.0	49	5.8	8.8	N/A	N/A
8/8/2011	MW-5	30.71	26.30	796.39	N/A	N/A	CP	N/A	0.72	2.25	NO	17.1	40	5.3	1.8	N/A	N/A
8/8/2011	OB-1	65.50	46.02	779.83	N/A	N/A	N/A	N/A	3.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

1. Purge Methods; LF=Low Flow, CP=Conventional Purge (3-5 well volumes), NP=No Purge (HydraSleeve).
2. Field sampling performed by Duke Energy Carolinas, LLC personnel.
3. umho/cm indicates micro ohms per centimeter.
4. SU indicates Standard Units.
5. NTU indicates Nephelometric Turbidity Units.
6. mV-NHE indicates millivolts-Normal Hydrogen Electrode.
7. Information provided by Tim Hunsucker of Duke Energy Carolinas, LLC on August 31, 2011.

Table 2 - Field and Analytical Results
Duke Energy Carolinas, LLC/Marshall Steam Station
Dry Ash Landfill - Permit No. 1804
Groundwater Monitoring Report

Sample Date: August 8, 2011

Field Sampling performed by Duke Energy Carolinas, LLC

Laboratory Certificate Codes:
Duke Energy Carolinas, LLC Field #5193
Duke Energy Analytical Laboratory #248
Pace Analytical Services, Inc. #40
Summit Environmental Technologies, Inc. #631

Parameter	SWS ID	Units	Certificate Code	Monitoring Wells					1804 Field Blank	SWSL	15A NCAC 2L
				1804 MW-1	1804 MW-2	1804 MW-3	1804 MW-4	1804 MW-5			
Field pH	320	SU	5193	**5.6**	**5.2**	**4.8**	**5.8**	**5.3**	-	-	6.5-8.5
Field Specific Conductivity	323	umho/cm	5193	134	381	100	49	40	-	-	-
Temperature	325	°C	5193	16.6	16.7	16.4	18.0	17.1	-	-	-
Top of Casing	328	feet	-	823.70	797.22	813.07	867.38	822.69	-	-	-
Depth to Water	318	feet	-	51.17	7.04	8.38	38.86	26.30	-	-	-
Water Elevation	319	feet	-	772.53	790.18	804.69	828.52	796.39	-	-	-
Well Depth	411	feet	-	78.75	35.10	28.15	50.20	30.71	-	-	-
Arsenic	14	ug/L	248	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	10	10
Barium	15	ug/L	248	71.53 J	64.58 J	339	48.92 J	50.51 J	3.34 U	100	700
Boron	428	ug/L	248	431	**2,901**	33.35 U	33.35 U	33.35 U	33.35 U	NE	700
Biological Oxygen Demand, 5-day*	316	ug/L	40	2,000 U	2,000 U	2,000 U	2,000 U	76,000	2,000 U	NE	NE
Cadmium	34	ug/L	248	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	1	2
Chemical Oxygen Demand	317	ug/L	248	6,430 J	5,420 J	7,430 J	6,760 J	5,080 J	4,410 J	NE	NE
Chloride	455	ug/L	248	2,745	4,835	9,987	1,849	3,680	27.2 J	NE	250,000
Chromium	51	ug/L	248	8.72 J	3.34 U	3.34 U	3.34 U	3.34 U	3.34 U	10	10
Copper	54	ug/L	248	3.34 U	3.34 U	3.34 U	3.34 U	3.34 U	3.34 U	10	1,000
Fluoride	312	ug/L	248	115 J	83.6 J	69.4 J	96.9 J	53.1 J	34 J	2,000	2,000
Iron	340	ug/L	248	27.07 J	6.67 U	7.53 J	23.16 J	27.25 J	6.67 U	300	300
Lead	131	ug/L	248	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	10	15
Manganese	342	ug/L	248	7.7 J	13.48 J	**58.18**	3.34 U	13.19 J	3.34 U	50	50
Mercury	132	ug/L	248	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.2	1
Nickel	152	ug/L	248	3.34 U	3.34 U	3.53 J	3.34 U	3.34 U	3.34 U	50	100
Nitrate as Nitrogen	303	ug/L	248	132 J	558 J	7,065 J	127 J	5.4 U	5.4 U	10,000	10,000
Selenium	183	ug/L	248	2.02 J	**44.05**	0.67 U	0.67 U	0.67 U	0.67 U	10	20
Silver	184	ug/L	248	3.34 U	3.34 U	3.34 U	3.34 U	3.34 U	3.34 U	10	20
Sulfate	315	ug/L	248	39,500 J	159,000 J	427 J	205 J	75.3 J	18 U	250,000	250,000
Total Dissolved Solids	311	ug/L	248	104,000	281,000	48,000	40,000	36,000	-	NE	500,000
Total Organic Carbon	357	ug/L	248	118	328	92 J	304	140	29 J	NE	NE
Total Organic Halide	396	ug/L	631	100 U	100 U	100 U	100 U	100 U	100 U	NE	NE
Zinc	213	ug/L	248	3.75 J	3.9 J	18.78	3.34 U	3.34 U	3.34 U	10	1,000

Notes:

1. Concentrations presented in micrograms per liter (µg/L).
2. "SWS ID" is the Solid Waste Section Identification Number.
3. "SWSL" is the Solid Waste Section Limit. DENR defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
4. 15A NCAC 2L Standard is from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2L - Groundwater Classifications and Standards," DENR (last amended on January 1, 2010).
5. Grayed values indicate values that attain or exceed the SWSL standard.
6. **Bold** values indicate values that attain or exceed the 15A NCAC 2L standard.
7. NE indicates not established. Blank cells indicate that there is no information relevant to the respective row.
8. Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations above the method detection limit (MDL). "J" is used for parameters detected at estimated concentrations above the MDL but below the laboratory's method reporting limit (MRL). An italicized *J* -flag is a data qualifier, added by Altamont, to indicate a detected concentration that is greater than the laboratory's MRL but less than the SWSL.
9. Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on August 31, 2011.
10. According to the Constituent Look-up webpage on the DENR 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 listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
11. * The Biological Oxygen Demand EPA Method hold time was exceeded for MW-1, MW-2, and MW-4 by approximately 2 hours.

Table 3 - North Carolina Administrative Code (NCAC) 2L Groundwater Quality Exceedances
Duke Energy Carolinas, LLC/Marshall Steam Station
Dry Ash Landfill - Permit No. 1804
Groundwater Monitoring Report

Sample Date: August 8, 2011						
Parameter	**Well ID**	**Result**	**Units**	**15A NCAC 2L Standard**	**Historic Concentrations**	**Cause and Significance**
pH	MW-1	5.6	SU	6.5-8.5	5.2 - 6.2	pH consistent with historic readings at well.
	MW-2	5.2	SU		5.1 - 6.1	pH consistent with historic readings at well.
	MW-3	4.8	SU		4.4 - 5.4	pH consistent with historic readings at well.
	MW-4	5.8	SU		5.1 - 6.3	pH consistent with historic readings at well.
	MW-5	5.3	SU		5.1 - 5.8	pH consistent with historic readings at well.
Boron	MW-2	2,901	ug/L	700	2,175 - 2,770	Well located adjacent to ash basin. Results are likely reflective of water quality in ash basin pond.
Manganese	MW-3	58.18	ug/L	50	12.00 - 98.00	Manganese concentration consistent with historic concentrations at the well.
Selenium	MW-2	44.05	ug/L	20	1.00 - 30.50	Well located adjacent to ash basin. Groundwater in well is likely reflective of water in ash basin pond.

Notes:

1. Concentrations presented in micrograms per liter (µg/L).
2. 15A NCAC 2L Standard is from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2L - Groundwater Classifications and Standards," DENR (last amended on January 1, 2010).
3. Data obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on August 31, 2011.

APPENDICES

APPENDIX A
Chain-of-Custody Forms

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy SM

For Detailed Instructions, see:
http://dewww/essenv/coc/

Duke Energy Analytical Lab Services
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-5038

Analytical Laboratory Use Only

LIMS # J11080092 | MATRIX: GW-RCRA | Samples Originating From: NC √ SC ___

Logged By: [illegible] | Date & Time: 8.8.11 13:45

VE | Cooler Temp (C): 0.9

PO: PACE PO #146146

MR #:

SAMPLE PROGRAM: Water √ ___ ___ ___ Ground NPDES Drinking Water UST ___ RCRA Waste ___

Page 1 of 1

DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

rev Aug 2011

Customer must Complete

1) Project Name: *MARSHALL DRY ASH LANDFILL Permit #18-04* | 2) Phone No: 875-5257

3) Client: LDC / TSH / Ed Sullivan | 4) Fax No: 875-4349

5) Business Unit: 20035 | 6) Process: ENVWT | 7) Resp. To: MS00

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

Customer to complete all appropriate NON-SHADED areas.

[15] Preserv.: 1=HCL 2=H_2SO_4 3=HNO_3 4=Ice 5=None

[16] Analyses Required

LAB USE ONLY [11] Lab ID	[12] Chem Desktop No.	[13] Sample Description or ID	[14] Collection Information: Date	Time	Signature	[17] Comp.	[18] Grab	NO3-N, Cl, F, SO4 (IC 4	lab pH, Alk (4.5) 2, 4	TOC	Hg (EPA 245.1) 3	Metals Prep - 3030C (ICP - EPA 200.7) Ag, B, Ba, Ca, CU, Cr, Fe, K, Mg, Mn, Na, Ni, Zn (IMS - EPA 200.8) As, Cd, PB, Se 3	COD 2, 4	TOX 2, 4	BOD 4	TDS 4	Chlorine (ppm)	[20] Total # of Containers
		Rw 8/																
2011016975		MW-1	8/8/11	0815	RW		X	1	1	1	1	1	1	1	1	1	[illegible]	8
2011016976		MW-2	8/8/11	0900	RW		X	1	1	1	1	1	1	1	1	1	[illegible]	8
2011016977		MW-3	8/8/11	1030	SC		X	1	1	1	1	1	1	1	1	1	[illegible]	8
2011016978		MW-4	8/8/11	0755	SC		X	1	1	1	1	1	1	1	1	1	[illegible]	8
2011016979		MW-5	8/8/11	1200	RW		X	1	1	1	1	1	1	1	1	1	[illegible]	8
2011016980		QC SAMPLE (WELL # MW-5)	8/8/11	1000	RW										1		[illegible]	1
2011016981		FIELD BLANK	8/8/11	1055	RW		X	1	1	1	1	1	1	1			n/a	6

Customer to complete appropriate columns to right

Customer to sign & date below

21) Relinquished By: RW	Date/Time: 8-8-11 1245	Accepted By: [illegible]	Date/Time: 8-8-11 1245	Customer, important please indicate desired turnaround	[22] Requested Turnaround
Relinquished By	Date/Time	Accepted By:	Date/Time		14 Days √
Relinquished By	Date/Time	Accepted By:	Date/Time		*7 Days ___
23) Seal/Locked By	Date/Time	Sealed/Lock Opened By	Date/Time		*48 Hr ___

24) Comments: Regulatory Agency : NCDENR/DWM -SW Section - State EDD Fomat Required NOTE: As, Cd, Pb, Se - analyzed by IMS - All other metals analyzed by ICP.

*Other ___ * Add. Cost Will Apply

Chain of Custody

Order ID: 1116389

COC

Pace Analytical
www.pacelabs.com

Workorder: 92100033 **Workorder Name:** J11080092 **Results Requested** 8/17/2011

Report / Invoice To	Subcontract To
Kevin Herring Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092 Email: kevin.herring@pacelabs.com	Summit P.O. CHS09843

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: FLX	LAB USE ONLY
1	2011016975	8/8/2011 08:15	92100033001	Water			
2	2011016976	8/8/2011 09:00	92100033002	Water			
3	2011016977	8/8/2011 10:30	92100033003	Water			
4	2011016978	8/8/2011 07:55	92100033004	Water			
5	2011016979	8/8/2011 10:00	92100033005	Water			
6	2011016981	8/8/2011 10:55	92100033007	Water			

Comments

Transfers	Released By	Date/Time	Received By	Date/Time
1	Erin R Waters	8/9/11 17:00	Fedex	8/9/11 1700
2				8/10/11 1:45
3				
4				
5				

1116389-01 → 06