

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):
 S&ME, Inc. (Consultant)

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:
 Name: John Whitehead Phone: 864.574.2360
 E-mail: jwhitehead@smeinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Duke Energy Marshall Steam Station FGD Landfill	8320 East Hwy 150 Terrell, Catawba County, NC	18-09	.0500	September 8, 2010

Environmental Status: (Check all that apply)
 Initial/Background Monitoring Detection Monitoring Assessment Monitoring Corrective Action

Type of data submitted: (Check all that apply)
 Groundwater monitoring data from monitoring wells Methane gas monitoring data
 Groundwater monitoring data from private water supply wells Corrective action data (specify) _____
 Leachate monitoring data
 Surface water monitoring data Other(specify) _____

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

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

Stanford Lummus, P.E. Senior Engineer 864.574.2360

Facility Representative Name (Print) Title (Area Code) Telephone Number
 Signature Date November 9, 2010 Affix NC Licensed/ Professional Geologist Seal

301 Zima Park Drive, Spartanburg, South Carolina 29301
 Facility Representative Address

F-0176
 NC PE Firm License Number (if applicable effective May 1, 2009)



**DUKE ENERGY
MARSHALL STEAM STATION
FLUE GAS DESULFURIZATION (FGD) LANDFILL
PERMIT #18-09
GROUNDWATER MONITORING REPORT
SEPTEMBER 2010 SAMPLING EVENT
S&ME Project No. 1411-09-047**

Prepared For:



Prepared By:



S&ME, Inc.
301 Zima Park Drive
Spartanburg, South Carolina 29304

November 9, 2010



November 9, 2010

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

**Reference: Semi-Annual Groundwater Monitoring Report
Duke Energy Carolinas – Marshall Steam Station
Flue Gas Desulfurization (FGD) Landfill
Permit # 18-09
S&ME# Project 1411-09-047**

Dear Ms. Drummond:

On behalf of Duke Energy, attached is the groundwater monitoring report for the Marshall Steam Station FGD Landfill (Permit # 18-09). Groundwater sampling for the landfill was performed on September 8, 2010.

The Groundwater Monitoring Report for the sampling event includes a summary of the analytical results, a figure showing groundwater contours at the landfill and a preliminary evaluation of values in excess of the NCAC 2L groundwater standards. Also attached is the Environmental Monitoring Reporting Form. An EXCEL file containing the laboratory results in the Electronic Data Deliverable format will be sent to you by e-mail.

If you have questions or require additional information, please contact us at 864.574.2360.

Sincerely,

S&ME, Inc.

John Whitehead
Senior Geologist

Stanford Lummus, P.E.
Senior Engineer



North Carolina Professional Engineering Firm License No. F-0176

S:\ENVIRON\2009\1411 Projects\1411-09-047 Duke Landfill GW Reports\Marshall FGD Landfill\september 2010 groundwater sampling event\MSS FGD LF Report - FINAL (June 4, 2010).doc

Semi-Annual Groundwater Monitoring Report
FGD Landfill Permit #18-09
Marshall Steam Station, Terrell, NC

S&ME Project No. 1411-09-047
November 9, 2010

cc:

Duke Energy
Marshall Steam Station
8320 East Highway 150
Terrell, NC 28682
Attn: Donna Burrell, Environmental Coordinator

Duke Energy
526 South Church Street
Charlotte, North Carolina 28201
Attn: Ed Sullivan, P.E. Mail Code EC13K

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Figure 1 Groundwater Contours September 2010

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Table 2 Summary of Field and Analytical Results

Chain of Custody Forms

1. PROJECT INFORMATION

Marshall Steam Station is located in Catawba County, North Carolina, on NC Highway 150, just west of Lake Norman. The station is owned and operated by Duke Energy Carolinas (Duke). The Marshall plant generates 2090 MW of electric power by combustion of coal.

The plant is located 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.

The FGD landfill is located northwest of the power plant and west of the onsite ash basin. Only Cell 1 of the landfill is in operation and is approximately 18 acres. The location of the permitted landfill areas and the associated groundwater monitoring wells is shown on **Figure 1**. In general, the topography of the site slopes from the west-northwest to the east towards the Marshall Ash Basin

The landfill is permitted to receive FGD residue (gypsum) and clarifier sludge. The clarifier sludge is generated from the FGD wastewater treatment system.

2. SCOPE OF WORK

S&ME completed the following tasks on Duke's behalf:

- Received information provided by Duke on field sampling and measurement of groundwater elevations for monitoring wells MS-8, MS-9, MS-10, MS-11, MS-12, MS-13, MS-14, MS-15, and MS-16 conducted on September 8, 2010. A surface water sample was not collected during this sampling event.
- Reviewed laboratory analytical results for samples. These analyses were performed by a North Carolina certified laboratory, using State approved methods. These results were provided in both in paper format and in an EXCEL file. The EXCEL file was adapted to conform to the format requirements of the NCDENR Electronic Data Deliverable template.
- Developed a groundwater surface contour map using map data and groundwater elevation data supplied by Duke.
- Provided a preliminary evaluation of the cause and significance of values exceeding NCAC 2L groundwater standards.
- Prepared and submitted this Groundwater Monitoring Report to Duke and to NCDENR.

3. RESULTS

3.1 Site Groundwater Flow

Groundwater contours for the site are shown on **Figure 1**. These contours were developed using groundwater elevations at the wells measured during sampling and the

approximate surface water elevation for the Marshall Ash Basin. Well MS-8 is located northwest of the landfill, at a higher topographic elevation than the landfill and remaining wells, and is considered to represent background groundwater conditions for the project.

Groundwater flow in the area of the landfill generally follows topography, flowing from the northwest to the southeast and east towards the Marshall Ash Basin. To a lesser extent, some component of groundwater flow is to the south, southwest and influenced by the surface water drainage feature located west and south of the landfill area. This drainage feature contains a stream, which is ephemeral in the reach upstream of the surface water sample location, and may not be a point of groundwater discharge typically found in the Piedmont of North Carolina. Surface water sample location SW-1 is located within this surface water drainage feature.

3.2 Analytical Results

A summary of the field data is presented in **Table 1**. The results of the laboratory analyses for the groundwater and surface water samples are summarized in **Table 2**.

Results from the monitoring wells and surface water sample were below the corresponding NCAC 2L groundwater quality standards with the exceptions noted below. Preliminary comments to the cause and/or significance of these exceptions are included.

- Field pH – Field pH values equal to or below 6.5 standard units were measured in each of the monitoring wells. Field pH values ranged from 5.0 at MS-10 and MS-12 to 6.5 at MS-9 and MS-15.

Monitoring well MS-8 is considered to be the project background well and should not be impacted by effects from the landfill. Monitoring well MS-11 is located hydraulically upgradient of the landfill and should not be impacted by effects from the landfill.

With the exception of the pH value at MS-15, pH values measured during this sampling event appear to be consistent with values from previous sampling events and appear to be representative of the natural groundwater pH in the area.

The field pH value measured at MS-15 was 6.5. The pH values at this well have fluctuated over the period of record and are summarized below:

Sample Date	MS-15 pH Value (S.U.)
9/25/2006	7.0
3/6/2007	7.9
9/10/2007	6.9
3/3/2008	6.5
9/10/2008	9.8
3/16/2009	9.2
9/8/2009	7.6
3/16/2010	9.3
9/8/2010	6.5

The pH results at this location should continue to be monitored.

- Chromium– Concentrations in excess of the NCAC 2L groundwater quality standard for chromium (10 µg/L) were measured at MS-8 (18.9 µg/L) and MS-15 (14.4 µg/L). Prior to the revision of the chromium standard in January 2010, no concentrations in excess of the NCAC 2L groundwater quality standard were observed in these wells. The historic results for chromium at these wells are as follows:

Sample Date	MS-15 Chromium (µg/L)	MS-8 Chromium (µg/L)
9/25/2006	19.3	25.67
3/6/2007	11.5	6.9
9/10/2007	15.6	26.6
3/3/2008	20.5	47.2
9/10/2008	12.9	82.0
3/16/2009	12.8	24.4
9/8/2009	16.4	8.0
3/16/2010	16.4	12.2
9/8/2010	14.4	18.9

The chromium concentration at MS-15 from the September 2010 sampling event continues to be lower than the September 2006 concentration, which represents chromium concentration before the initial placement of waste in the landfill. Again, monitoring well MS-8 is the background well and should not be impacted by effects from the landfill. Given the similar chromium concentrations for these two wells, the detected chromium concentrations at MS-8 and MS-15 are believed to be representative of the natural chromium concentrations in the groundwater.

- Iron – Concentrations in excess of the NCAC 2L groundwater quality standard for iron (300 µg/L) were measured at MS-8 (4000 µg/L), MS-10 (322 µg/L), MS-15 (369 µg/L) and MS-16 (4300 µg/L). Monitoring well MS-8 should not be impacted by effects from the landfill, and should thus be representative of the natural iron concentration in the groundwater. Monitoring well MS-8 is the landfill background monitoring well. The iron concentration detected here should be representative of general groundwater conditions in the area of the landfill. The potential effect of sample turbidity is discussed below. Iron concentrations at MS-10 and MS-15 are just slight above the NCAC 2L standard, while the iron concentration at MS-16 is on the same order of magnitude as measured in background well MS-8, again less the potential effect of sample turbidity.

As discussed in previous sampling reports, sample turbidity may influence iron concentrations in the groundwater samples. Turbidity values for MS-8, MS-10, MS-15 and MS-16 were 82.2, 6.2, 10.4 and 70.4 Nephelometric Turbidity Units (NTUs), respectively. The higher iron results were detected in the wells with the higher turbidity values.

- Manganese – Concentrations in excess of the NCAC 2L groundwater quality standard for manganese (50 µg/L) was measured in monitoring well MS-16 (53 µg/L). The manganese concentration in MS-16 has been relatively constant over the last five sampling events, and has been on a downward trend from an initial high of 775 µg/L reported in September 2006.

Considering the above trends and the turbidity values in samples MS-16 (see turbidity discussion in the Iron section above), it is likely that the observed manganese concentrations are representative of natural groundwater conditions and biased by turbidity.

In addition to the sample locations, compounds, and concentrations listed and discussed above, the groundwater analytical results for the compounds at the following sample locations were equal to or above the corresponding Solid Waste Section Limits (SWSL):

- Barium in excess of the SWSL of 100 µg/L was measured in wells MS-10, MS-13, MS-15, and MS-16.
- Zinc in excess of the SWSL of 10 µg/L was measured in MS-16.

TABLES



**TABLE 1 - FIELD DATA PARAMETERS
DUKE ENERGY MARSHALL STEAM STATION
FGD LANDFILL - PERMIT #18-09
GROUNDWATER MONITORING REPORT
S&ME PROJECT 1411-09-047**

11/9/2010

DATE	WELL NO.	WELL DEPTH (feet)	DEPTH TO WATER (feet)	WATER ELEV. (feet)	DEPTH TO PRODUCT (feet)	ODOR	Purge Method	AVG * PMP RATE (ml/min)	WELL VOL (gal)	EVAC VOL (gal)	EVAC (yes/no)	TEMP (deg C)	SPECIFIC CONDUCTANCE (umho/cm)	pH (units)	TURBIDITY (NTU)	ORP (mV-NHE)	DO (mg/l)
9/8/2010	MS-8	51.58	43.75	828.59	N/A	NA	CP	N/A	1.28	5.00	NO	16.8	44	5.9	82.2	N/A	N/A
9/8/2010	MS-9	53.00	40.55	827.49	N/A	NA	CP	N/A	2.03	6.00	NO	16.6	107	6.5	5.4	N/A	N/A
9/8/2010	MS-10	23.34	18.20	833.09	N/A	NA	CP	N/A	0.84	3.00	NO	17.0	24	5.0	6.2	N/A	N/A
9/8/2010	MS-11	42.72	34.26	825.52	N/A	NA	CP	N/A	1.38	4.50	NO	15.3	32	5.4	4.7	N/A	N/A
9/8/2010	MS-12	31.09	23.23	812.43	N/A	NA	CP	N/A	1.28	4.50	NO	15.0	21	5.0	3.0	N/A	N/A
9/8/2010	MS-13	41.52	30.76	811.14	N/A	NA	CP	N/A	1.75	6.00	NO	14.8	89	5.2	2.9	N/A	N/A
9/8/2010	MS-14	44.38	34.75	809.32	N/A	NA	CP	N/A	1.57	4.50	NO	16.0	49	5.9	4.6	N/A	N/A
9/8/2010	MS-15	63.08	49.65	811.82	N/A	NA	CP	N/A	2.19	6.75	NO	17.1	173	6.5	10.4	N/A	N/A
9/8/2010	MS-16	37.46	25.18	811.80	N/A	NA	CP	N/A	2.00	4.00	YES	17.6	98	6.0	70.4	N/A	N/A
9/8/2010	SW-1	N/A	N/A	N/A	N/A	NA	NP	NA	N/A	NA	NA	D-NS	D-NS	D-NS	D-NS	NA	NA

Sampling Performed by Duke Energy

Purge Methods

LF = Low Flow

CP = Coventional Purge (3 to 5 well vol)

BP = No Purge (HydraSleeve)

TABLE 2 - FIELD AND ANALYTICAL RESULTS
DUKE ENERGY MARSHALL STEAM STATION
FGD LANDFILL - PERMIT #18-09
GROUNDWATER MONITORING REPORT
S&ME PROJECT 1411-09-047

November 9, 2010

Page 1 of 2

Facility: Marshall Steam Station FGD Landfill #18-09											
Sample Date: September 9, 2010 (Field and Geochemistry Data)										Laboratory Certificate Codes:	
Field sampling performed by Duke Energy										Duke Power Field #5193	
										Pace Lab #40	
Parameter	SWS ID	Units	Certificate Codes	Monitoring Well Identification						SWSL	15A NCAC 2L*
				1809-MS-8	1809-MS-9	1809-MS-10	1809-MS-11	1809-MS-12	1809-MS-13		
Field pH	320	Std. Units	5193	5.9	6.5	5.0	5.4	5.0	5.2		6.5-8.5
Field Spec. Conductance	323	umho/cm	5193	44	107	24	32	21	89		
Temperature	325	C	5193	16.8	16.6	17.0	15.3	15.0	14.8		
Top Casing	328	msl-feet		872.34	868.04	851.29	859.78	835.66	841.90		
Depth to Water	318	feet		43.75	40.55	18.20	34.26	23.23	30.76		
Water Elevation	427	msl-feet		828.59	827.49	833.09	825.52	812.43	811.14		
Well Depth	411	feet		51.58	53.00	23.34	42.72	31.09	41.52		
Arsenic	14	ug/L	40	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	10	10
Barium	15	ug/L	40	84.2 J	35.9 J	160	70.5 J	74.1 J	112	100	700
Boron	428	ug/L	40	23.7	18.9	16.4	15.1	13.7	16.2	NE	700
Cadmium	34	ug/L	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	2
Chloride	455	ug/L	40	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	NE	250000
Chromium	51	ug/L	40	18.9	1.5 J	0.69 J	2 J	0.49 J	0.44 J	10	10
Copper	54	ug/L	40	3.9 J	0.3 U	0.3 U	0.3 U	0.3 U	0.42 J	10	1000
Fluoride	312	ug/L	40	150 J	100 J	100 U	100 U	100 U	100 U	2000	2000
Iron	340	ug/L	40	4000	249 J	322	242 J	54.9 J	66.6 J	300	300
Lead	131	ug/L	40	4 U	4 U	4 U	4 U	4 U	4 U	10	15
Manganese	342	ug/L	40	38.7 J	21.7 J	35.6 J	10 J	14.3 J	15.5 J	50	50
Mercury	132	ug/L	40	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.20	1
Nickel	152	ug/L	40	9.4 J	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	50	100
Nitrate (as Nitrogen)	303	ug-N/L	40	100 U	121 J	1160 J	100 U	100 U	3260 J	10000	10000
Selenium	183	ug/L	40	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	10	20
Silver	184	ug/L	40	0.21 J	0.1 U	0.1 U	0.12 J	0.1 U	0.42 J	10	20
Sulfate	315	ug/L	40	5000 U	6790 J	5000 U	5000 U	5000 U	5000 U	250000	250000
Total Dissolved Solids	311	ug/L	40	69000	85000	37000	45000	35000	77000	NE	500000
Zinc	213	ug/L	40	6.3 J	0.4 U	5.4 J	0.94 J	1.8 J	1.4 J	10	1000

Notes:

*15A NCAC 2L = 15A NCAC 2L .0200, Groundwater Quality Standards for Class GA groundwater

Bold Values indicate a value that attains or exceeds the 15A NCAC 2L Groundwater Quality Standard

NC SWSL = North Carolina Solid Waste Section Limit

Values in gray highlighted cells indicate a value that equals or exceeds the SWSL but is less than the 15A NCAC 2L Groundwater Quality Standard

J = Parameters are values greater than Method Detection Limit (MDL) but less than the SWSL

U = Not detected above the method detection limit, for reporting purposes concentrations have been set equal to the method detection limit

NE = Not established

**TABLE 2 - FIELD AND ANALYTICAL RESULTS
DUKE ENERGY MARSHALL STEAM STATION
FGD LANDFILL - PERMIT #18-09
GROUNDWATER MONITORING REPORT
S&ME PROJECT 1411-09-047**

November 9, 2010

Page 2 of 2

Facility: Marshall Steam Station FGD Landfill #18-09										
Sample Date: September 9, 2010 (Field and Geochemistry Data)								Laboratory Certificate Codes:		
Field sampling performed by Duke Energy								Duke Power Field #5193 Pace Lab #40		
Parameter	SWS ID	Units	Certificate Codes	Monitoring Well Identification				FIELD BLANK	SWSL	15A NCAC 2L*
				1809-MS-14	1809-MS-15	1809-MS-16	1809-SW-1			
Field pH	320	Std. Units	5193	5.9	6.5	6.0	not sampled			6.5-8.5
Field Spec. Conductance	323	umho/cm	5193	49	173	98	not sampled			
Temperature	325	C	5193	16.0	17.1	17.6	not sampled			
Top Casing	328	msl-feet		844.07	861.47	836.98				
Depth to Water	318	feet		34.75	49.65	25.18				
Water Elevation	427	msl-feet		809.32	811.82	811.80				
Well Depth	411	feet		44.38	63.08	37.46				
Arsenic	14	ug/L	40	2.7 U	2.7 U	2.7 U	not sampled	2.7 U	10	10
Barium	15	ug/L	40	44.3 J	123	124	not sampled	0.2 U	100	700
Boron	428	ug/L	40	12.3	10.3	8.2	not sampled	6	NE	700
Cadmium	34	ug/L	40	0.5 U	0.5 U	0.5 U	not sampled	0.5 U	1.0	2
Chloride	455	ug/L	40	5000 U	5000 U	5000 U	not sampled	5000 U	NE	250000
Chromium	51	ug/L	40	0.4 U	14.4	5.2 J	not sampled	0.4 U	10	10
Copper	54	ug/L	40	0.35 J	2.5 J	2.2 J	not sampled	0.3 U	10	1000
Fluoride	312	ug/L	40	120 J	110 J	200 J	not sampled	100 U	2000	2000
Iron	340	ug/L	40	219 J	369	4300	not sampled	14 U	300	300
Lead	131	ug/L	40	4 U	4 U	4 U	not sampled	4 U	10	15
Manganese	342	ug/L	40	4.4 J	4.7 J	53	not sampled	0.3 U	50	50
Mercury	132	ug/L	40	0.07 U	0.07 U	0.07 U	not sampled	0.07 U	0.20	1
Nickel	152	ug/L	40	1.7 U	2.2 J	2.9 J	not sampled	1.7 U	50	100
Nitrate (as Nitrogen)	303	ug-N/L	40	100 U	160 J	221 J	not sampled	100 U	10000	10000
Selenium	183	ug/L	40	3.8 U	3.8 U	3.8 U	not sampled	3.8 U	10	20
Silver	184	ug/L	40	0.34 J	0.35 J	0.34 J	not sampled	0.1 U	10	20
Sulfate	315	ug/L	40	5000 U	5000 U	5000 U	not sampled	5000 U	250000	250000
Total Dissolved Solids	311	ug/L	40	62000	122000	90000	not sampled	not sampled	NE	500000
Zinc	213	ug/L	40	0.4 U	0.4 U	14.4	not sampled	0.4 U	10	1000

Notes:

*15A NCAC 2L = 15A NCAC 2L .0200, Groundwater Quality Standards for Class GA groundwater

Bold Values indicate a value that attains or exceeds the 15A NCAC 2L Groundwater Quality Standard

NC SWSL = North Carolina Solid Waste Section Limit

Values in gray highlighted cells indicate a value that equals or exceeds the SWSL but is less than the 15A NCAC 2L Groundwater Quality Standard

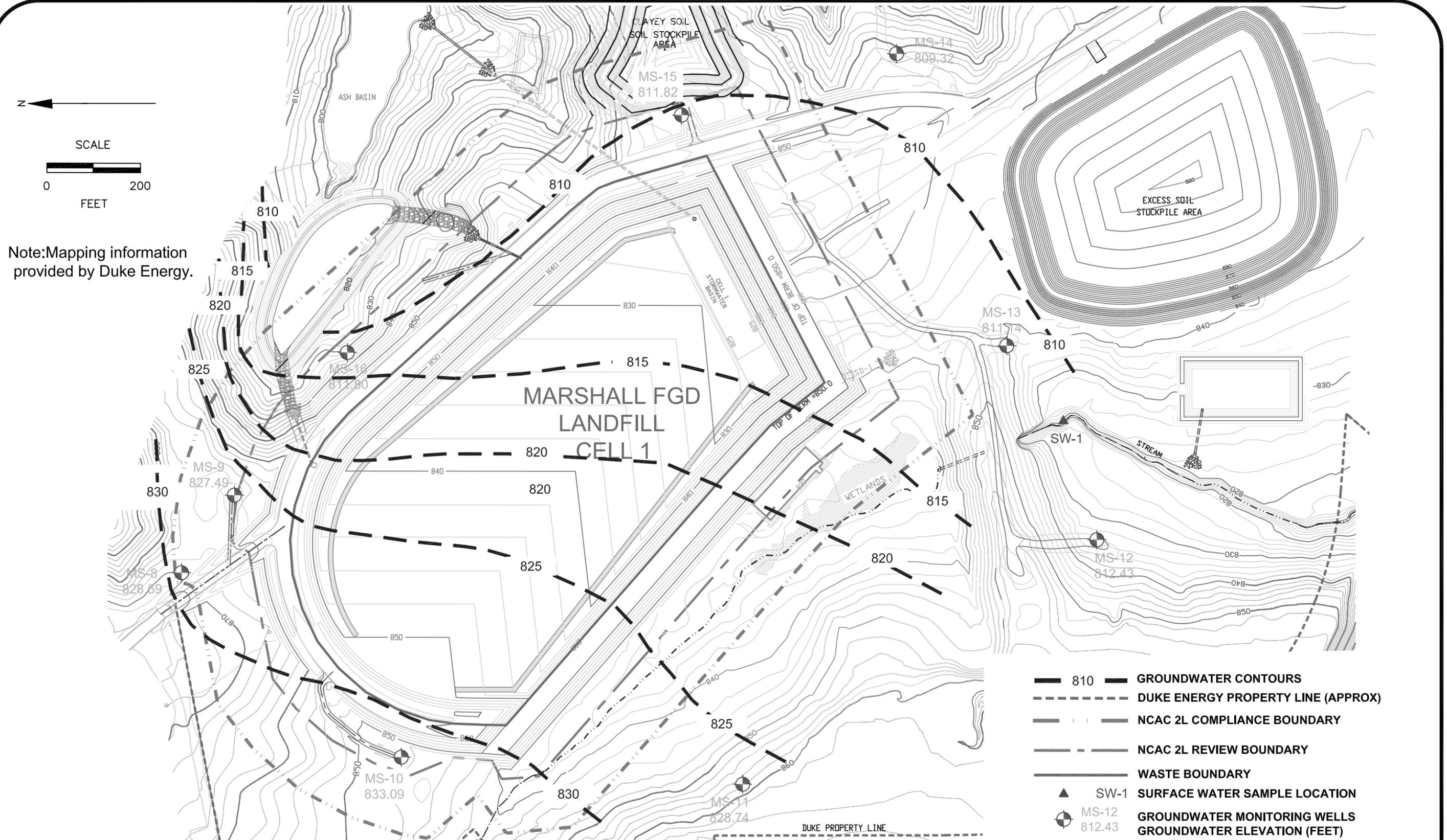
J = Parameters are values greater than Method Detection Limit (MDL) but less than the SWSL

U = Not detected above the method detection limit, for reporting purposes concentrations have been set equal to the method detection limit

NE = Not established

FIGURES





- 810 GROUNDWATER CONTOURS
- DUKE ENERGY PROPERTY LINE (APPROX)
- NCAC 2L COMPLIANCE BOUNDARY
- NCAC 2L REVIEW BOUNDARY
- WASTE BOUNDARY
- SW-1 SURFACE WATER SAMPLE LOCATION
- MS-12 812.43 GROUNDWATER MONITORING WELLS GROUNDWATER ELEVATION (FEET)

SCALE:
AS SHOWN

PROJECT NO.
1411-09-047

DATE:
November 9, 2010

DRAWN BY:
j. whitehead

CHECKED BY:
s. lummus



301 Zima Park Drive
Spartanburg, SC 29304
Phone 864.574.2360
Fax 864.576.8730
[WWW.SMEINC.COM](http://www.smeinc.com)

**DUKE ENERGY MARSHALL STEAM STATION
FLUE GAS DESUPHURIZATION (FGD) LANDFILL - PERMIT #18-09
GROUNDWATER CONTOURS
SEPTEMBER 2010**

FIGURE NO.
1

APPENDIX





For Detailed Instructions, see:
http://idewww/lessenv/cood

Duke Energy Analytical Lab Services
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-5938

1) Project Name: MARSHALL FGD LANDFILL Permit # 18-09
2) Phone No: 875-5257
3) Client: LDC / TSH / Ed Sullivan 4) Fax No: 875-4349
5) Business Unit: 20035 6) Process: BENVWS 7) Resp. To: MS00
8) Project ID: 9) Activity ID: 10) Mail Code: MGO3A3

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Sample: Omitting From: **GWATER** NIC V. SC
SAMPLE PROGRAM: Ground Water, NPIDES, Drinking Water, RCRA Waste
Logged By: CPK Date & Time: **7.9**
Cooler Temp (C): **2.8**
15) Preserv.: 1=HCl, 2=H₂SO₄, 3=HNO₃, 4=Ice, 5=None

Customer to complete all appropriate NON-SHADED areas.

11) Lab ID	12) Chem Desktop No.	13) Sample Description or ID		14) Collection Information			16) Analyses Required	17) Comp.	18) Grab	19) NO ₃ , Cl, Fluoride	20) Hg	21) METALS (Ag, As, B, Ba, Ca, Cd, Cr, K, Mg, Na, Ni, Pb, Se, Cu, Fe, Mn, Zn)	22) Total # of Containers
		Date	Time	Signature	Date	Time							
	30013414	MS-8	9/8/10	0800	RAN	X							4
	30013415	MS-9	9/8/10	0850	RAN	X							4
	30013416	MS-10	9/8/10	1120	RAN	X							4
	30013417	MS-11	9/8/10	0940	DC	X							4
	30013418	MS-12	9/8/10	0850	LAC	X							4
	30013419	MS-13	9/8/10	0810	LAC	X							4
	30013420	MS-14	9/8/10	1045	RAN	X							4
	30013421	MS-15	9/8/10	0945	RAN	X							4
	30013422	MS-16	9/8/10	1100	DC	X							4
	30013423	SW-1	←	DRY - NO SAMPLE	DC	X							4
	30013424	FIELD BLANK	9/8/10	1145	DC	X							3

Customer to sign & date below

21) Relinquished By: [Signature] Date/Time: 9-8-10 13:20
 Relinquished By: [Signature] Date/Time: 9-8-10 2:30 PM
 Relinquished By: [Signature] Date/Time: 9/8/10 14:30
 22) Sealed/Locked By: [Signature] Date/Time: 9/8/10 14:30
 23) Sealed/Locked By: [Signature] Date/Time: 9/8/10 14:30
 24) Comments: Regulatory Agency: NCDENR/DWM - SW Section - State EDD Format Required

927 7138

9-20-10



For Detailed Instructions, see:
<http://dewwww/essenvicoc/>

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

1) Project Name: MARSHALL FGD LANDFILL Permit # 18-09
 3) Client: LDC / TSH / Ed Sullivan
 5) Business Unit: 20035
 6) Process: BENVVS 7) Resp. To: MS00
 9) Activity ID:
 10) Mail Code: MGO3A3

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

LIMS #10-AUG-0293
 Analytical Laboratory Use Only
 Samples Originating From: NC, SC
 SAMPLE PROGRAM: Ground Water, NPDES, Drinking Water, RCRA Waste
 Logged By: CPK
 Date & Time: PACE
 Cooler Temp (C): 2.8
 16 Preserv.: 1=HCL, 2=H2SO4, 3=HNO3, 4=Ice, 5=None

12 Chem Desktop No.	13 Sample Description or ID		14 Collection Information		17 Comp.	18 Grab	16 Analyses Required	4	3	20 Total # of Containers
	Date	Time	Signature							
30013414	MS-8	9/8/10 0800	RAW	X	1	1	1	1	1	4
30013415	MS-9	9/8/10 0850	RAW	X	1	1	1	1	1	4
30013416	MS-10	9/8/10 1120	RAW	X	1	1	1	1	1	4
30013417	MS-11	9/8/10 0940	UDC	X	1	1	1	1	1	4
30013418	MS-12	9/8/10 0850	UDC	X	1	1	1	1	1	4
30013419	MS-13	9/8/10 0810	UDC	X	1	1	1	1	1	4
30013420	MS-14	9/8/10 1045	RAW	X	1	1	1	1	1	4
30013421	MS-15	9/8/10 0945	RAW	X	1	1	1	1	1	4
30013422	MS-16	9/8/10 1100	UDC	X	1	1	1	1	1	4
30013423	SW-1	← DRY - NO SAMPLE	UDC	X	1	1	1	1	1	4
30013424	FIELD BLANK	9/8/10 1145	UDC	X	1	1	1	1	1	3

Customer to complete appropriate columns to right

Customer to complete all appropriate NON-SHADED areas.

21) Relinquished By: [Signature] Date/Time: 9/8/10 1320
 Relinquished By: [Signature] Date/Time: 9/8/10 2:30 PM
 Relinquished By: [Signature] Date/Time: 9/8/10 1430
 23) Sealf/Locked By: [Signature] Date/Time:
 24) Comments: Regulatory Agency: NCDENR/DWM - SW Section - State EDD Format Required

22) Requested Turnaround: 14 Days 7 Days 48 Hr Other Add. Cost Will Apply

Customer, important please indicate desired turnaround