

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.

Fac/Perm/Co ID # 8505	Date 8 17 11	Doc ID# 143804
--------------------------	-----------------	-------------------

### 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: William M. Miller, PE

Phone: 828-687-9080 Ext 315

E-mail: [wmiller@smeinc.com](mailto:wmiller@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 Carolinas Belews Creek Steam Station FGD Residue Landfill	3195 Pine Hall Rd Pine Hall, NC 27009	85-05	.0500	November 17, 2009

### Environmental Status: (Check all that apply)

- Initial/Background Monitoring  Detection Monitoring  Assessment Monitoring  Corrective Action

### Type of data submitted: (Check all that apply)

- Groundwater monitoring data from monitoring wells  Methane gas monitoring data  
 Groundwater monitoring data from private water supply wells  Corrective action data (specify) \_\_\_\_\_  
 Leachate monitoring data  Other(specify) Hydrogen sulfide gas monitoring  
 Surface water monitoring data

### Notification attached?

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

### Certification

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

William M Miller

Senior Project Engineer

828-687-9080 Ext 315

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Affix NC Licensed/ Professional Geologist Seal

Signature

Date

44 Buck Shoals Rd Suite C-3, Arden NC 28704

Facility Representative Address

F-0176

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

Revised 6/2009





March 5, 2010

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

**Reference: Duke Energy Carolinas – Belews Creek Steam Station**  
Flue Gas Desulfurization (FGD) Landfill  
Permit # 85-05  
Hydrogen Sulfide and Explosive Gas Monitoring Report  
S&ME Project 1411-09-047

Dear Ms. Drummond:

On behalf of Duke Energy, Inc. (Duke Energy), S&ME, Inc. (S&ME) is providing hydrogen sulfide (H<sub>2</sub>S) and explosive gas monitoring data for the Belews Creek FGD (Flue Gas Desulfurization) Landfill located in Stokes County, North Carolina. This data is being provided in accordance with the facility's Permit to Operate.

On November 17, 2009, measurements for H<sub>2</sub>S gas and explosive gas were obtained from the leachate collection pipes at seven locations located on the east and west sides of the landfill. The sample locations are indicated on **Figure 1**. The measurements were taken by Duke Energy personnel using a Drager X-am 52000 Multi-Gas Monitor.

As noted on the field data sheets, three sample locations are not in service at this time. Currently waste is only being placed in Cell 1 and Cell 2 of the landfill. These additional sampling locations will be placed into service as waste placement progresses.

H<sub>2</sub>S was not detected at any of the seven locations; all measurements exhibited H<sub>2</sub>S concentrations of 0 ppm. Explosive gases were not detected at any of the seven locations; all measurements exhibited lower explosive limits (LEL) of 0%. The field data sheets for the sampling event are attached. The data suggests that the material in the landfill is producing neither H<sub>2</sub>S nor explosive gases. The next gas monitoring event will be conducted in May 2010.

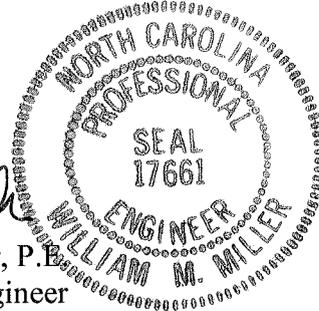
**CLOSURE**

If you have questions or require additional information, please contact me at 828-687-9080.

Sincerely,

**S&ME, Inc.**

  
William M. Miller, P.E.  
Senior Project Engineer



  
Larry Armstrong, P.E.  
Senior Engineer 

North Carolina Professional Engineering Firm License No. F-0176

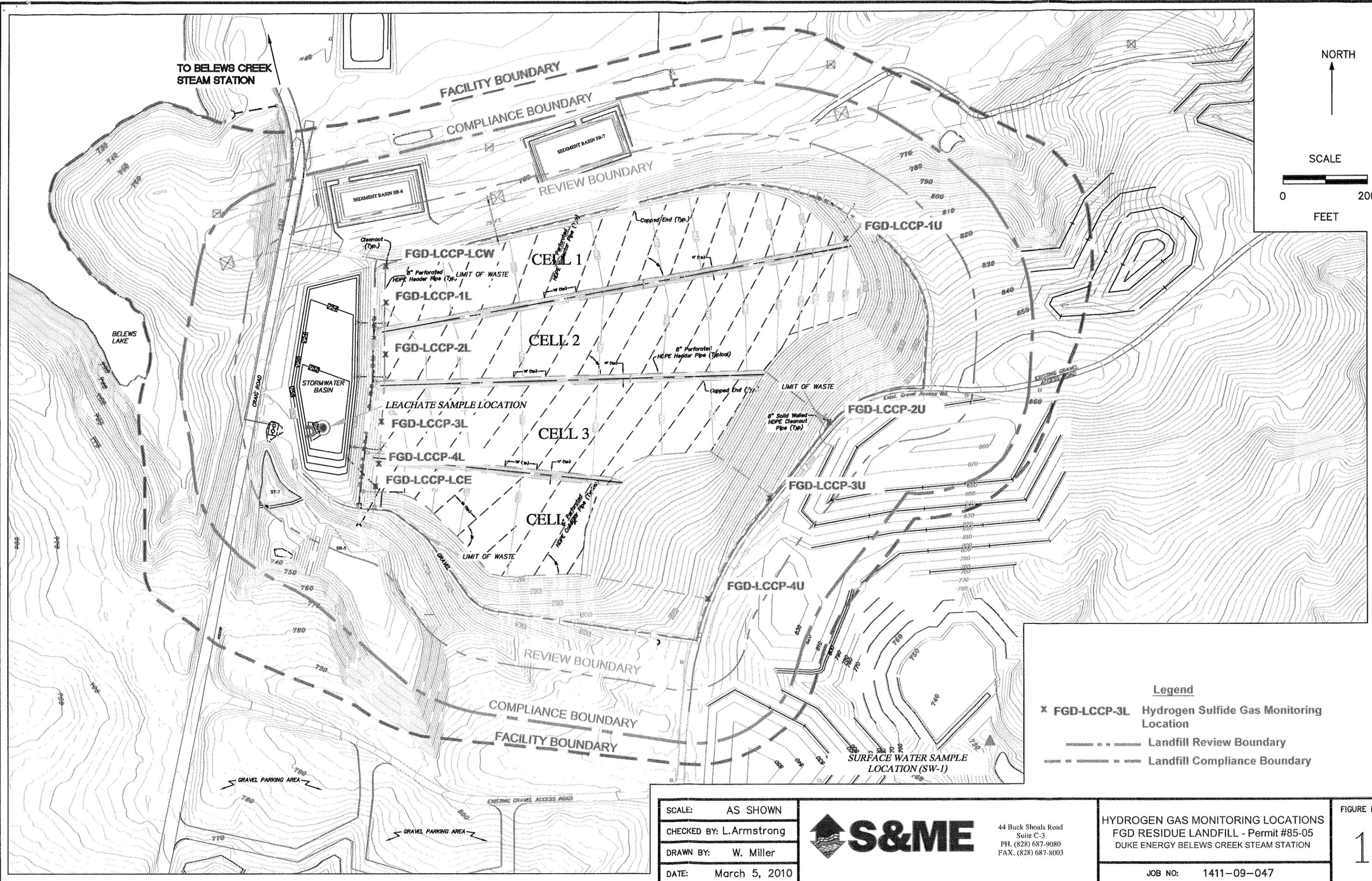
WMM/LA/

S:\2009 PROJECTS\1411\ENVIRONMENTAL PROJECTS\11 09 047 Duke Energy Landfills - GW Reports\BCS FGD LF\Gas Monitoring Reports\March 2010\BCS FGD LF H2S Report March 2010.doc

Attachments: Figure 1, Sample Location Map  
Field Data Sheets

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

Duke Energy  
Belews Creek Steam Station  
3195 Pine Hall Rd  
Belews Creek, North Carolina 27009  
Attention: Ms. Melanie Martin





**DUKE ENERGY**  
**LEACHATE COLLECTION CLEANOUT PIPES (LCCP)**  
**HYDROGEN SULFIDE (H<sub>2</sub>S) MONITORING**

<b>LOCATION:</b>	BELEWS CREEK STEAM STATION	<b>PROCEDURE NO:</b>	NA
<b>PROJECT NAME:</b>	FGD Landfill / Hydrogen Sulfide Monitoring	<b>Instrument Serial #</b>	ARZH-0312
<b>SAMPLING DATE(s):</b>	17-Nov-2009		

**FIELD CREW:** LDC, RLW

<b>SAMPLING EQUIPMENT</b>	Drager X-am 5000
---------------------------	------------------

Location	H2S (ppm)	LEL (%)	Collector
FGD-LCCP-LCN	0	0	LDC / RLW
FGD-LCCP-1L	0	0	LDC / RLW
FGD-LCCP-2L	0	0	LDC / RLW
FGD-LCCP-3L	0	0	LDC / RLW
FGD-LCCP-4L	0	0	LDC / RLW
FGD-LCCP-LCS	0	0	LDC / RLW
FGD-LCCP-1U	0	0	LDC / RLW
FGD-LCCP-2U	Not in service		
FGD-LCCP-3U	Not in service		
FGD-LCCP-4U	Not in service		

LCW = Lower Corner North  
 LCE = Lower Corner South  
 1L = Cell 1 Lower  
 1U = Cell 1 Upper

The Drager X-am 5000 (serial #ARZH-0312) was calibrated on November 16, 2009. Specific calibration information is listed below:

Gas	Range	Accuracy
Sulfur Dioxide	10 PPM	± 10%
Hydrogen Sulfide	25 PPM	± 5%
Carbon Monoxide	100 PPM	± 2%
Methane	2.5% (50 % LEL)	± 2%
Oxygen	17%	± 2%