

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 FGD Residue Landfill Phase 1, Cell 1	8320 East NC Highway 150 Terrell, NC 28682	1809	.0500	September 27, 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  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.

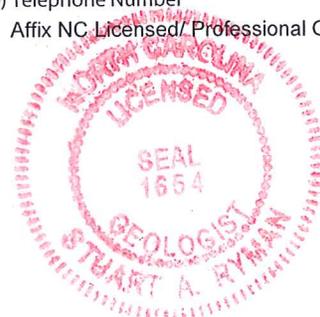
Stuart A. Ryman P.G. (828) 281-3350  
 Facility Representative Name (Print) Title (Area Code) Telephone Number  
 Signature [Signature] Date 12.22.11  
 Affix NC Licensed/Professional Geologist Seal

231 Haywood Street Asheville, NC 28801

Facility Representative Address

C-2185

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



**ALTAMONT ENVIRONMENTAL, INC.**  
ENGINEERING & HYDROGEOLOGY

231 HAYWOOD STREET, ASHEVILLE, NC 28801  
TEL. 828.281.3350 FAC. 828.281.3351  
WWW.ALTAMONTENVIRONMENTAL.COM

*Transmitted via email:  
Elizabeth.Werner@ncdenr.gov*

December 22, 2011

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: Hydrogen Sulfide Gas Monitoring  
Duke Energy Carolinas, LLC/Marshall Steam Station  
FGD Residue Landfill, Phase 1, Cell 1 Permit No. 1809  
Terrell, NC

Dear Ms. Werner:

On behalf of Duke Energy Carolinas LLC (Duke), Altamont Environmental, Inc. (Altamont) is providing hydrogen sulfide (H<sub>2</sub>S) gas monitoring data for the Marshall Steam Station Flue Gas Desulfurization (FGD) Residue Landfill, Phase 1, Cell 1, located in Terrell, North Carolina.

On September 27, 2011, measurements for H<sub>2</sub>S gas were obtained from the landfill leachate clean-out pipes at two locations. The sample locations are indicated as FGD-LCCP1 and FGD-LCCP2 on Figure 1. The measurements were taken by Duke personnel using an Industrial Scientific Corporation iTX Multi-Gas Monitor. A copy of the Field Data Sheet can be found in the Appendix.

H<sub>2</sub>S was not detected at either of the two locations monitored; all measurements exhibited H<sub>2</sub>S concentrations of zero parts per million (ppm). The data suggest that the material in the landfill is not producing H<sub>2</sub>S gas.

The next set of measurements will be collected in March 2012.

Ms. Elizabeth Werner  
December 22, 2011  
Page 2 of 2

If you have questions or require additional information, please contact me at 828-281-3350.

Sincerely,

ALTAMONT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'SAR', with a long horizontal stroke extending to the right.

Stuart A. Ryman, P.G.

Enclosures: Figure 1—Gas Monitoring Sample Locations  
Appendix A—Field Data Sheet

**CCed via email:**

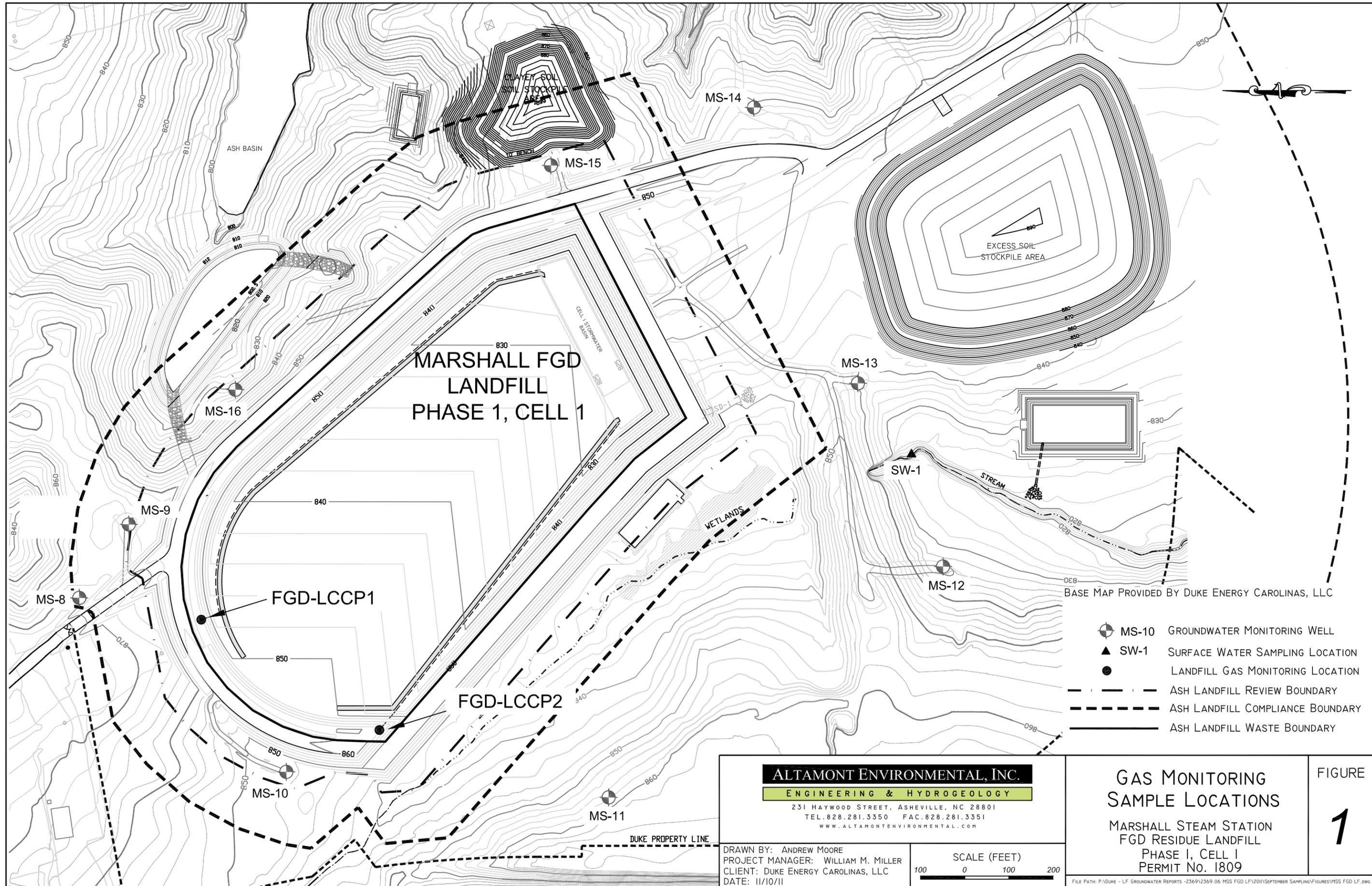
Mr. Ed Sullivan, P.E., Duke Energy Carolinas, LLC [Ed.Sullivan@duke-energy.com](mailto:Ed.Sullivan@duke-energy.com)

Mr. Tim Hunsucker, Duke Energy Carolinas, LLC, [Tim.Hunsucker@duke-energy.com](mailto:Tim.Hunsucker@duke-energy.com)

Ms. Donna Burrell, Duke Energy Carolinas, LLC, [Donna.Burrell@duke-energy.com](mailto:Donna.Burrell@duke-energy.com)

Mr. William M. Miller, P.E., Altamont Environmental, Inc., [bmiller@altamontenvironmental.com](mailto:bmiller@altamontenvironmental.com)

Mr. Stuart A. Ryman, P.G., Altamont Environmental, Inc., [sryman@altamontenvironmental.com](mailto:sryman@altamontenvironmental.com)



BASE MAP PROVIDED BY DUKE ENERGY CAROLINAS, LLC

- MS-10 GROUNDWATER MONITORING WELL
- SW-1 SURFACE WATER SAMPLING LOCATION
- LANDFILL GAS MONITORING LOCATION
- ASH LANDFILL REVIEW BOUNDARY
- ASH LANDFILL COMPLIANCE BOUNDARY
- ASH LANDFILL WASTE BOUNDARY

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

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



**GAS MONITORING  
 SAMPLE LOCATIONS**  
 MARSHALL STEAM STATION  
 FGD RESIDUE LANDFILL  
 PHASE I, CELL I  
 PERMIT NO. 1809

FIGURE  
**1**

**APPENDIX A  
FIELD DATA SHEET**



# DUKE ENERGY

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

LOCATION:	MARSHALL STEAM STATION	PROCEDURE NO:	NA
PROJECT NAME:	FGD Landfill / Hydrogen Sulfide Monitoring	ITX Serial Number	07090SF006
SAMPLING DATE(s):	27-Sep-2011 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<i>WC</i>	

PERMIT # **18-09**

FIELD CREW: **LDC, TSH**

SAMPLING EQUIPMENT **Industrial Scientific Corp / ITX Multi-Gas Monitor**

Location	Time	H2S (ppm)	LEL (%)	Collector
FGD-LCCP-1	1210	0	0	LDC / TSH
FGD-LCCP-2	1220	0	0	LDC / TSH

**NOTES** ITX Multi-Gas Monitor is checked out from the Marshall Station pre-calibrated for Hydrogen Sulfide (Range 0 to 999 ppm) and LEL Calibration documentation available from Marshall upon request