



526 South Church Street
Charlotte, NC 28202

Mailing Address:
PO Box 1006
Mail Code EC13K
Charlotte, NC 28201-1006

704 382 4761

704 382 6240 fax

October 23, 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 Leachate Sampling Results
Duke Energy Carolinas, LLC
Allen Steam Station
Retired Ash Basin (RAB) Ash Landfill, Phase I, Cells 1 and 2, Permit #36-12

Dear Ms. Werner:

In accordance with the landfill *Operations Plan*, Duke Energy is providing the results of semi-annual leachate sampling for the Allen Retired Ash Basin (RAB) Ash Landfill located in Belmont, North Carolina.

On September 26, 2013, leachate samples were collected from the leachate collection system. The samples were collected by Duke Energy personnel. A summary of sampling results can be found in Table 1. As noted in the table, 15 NCAC 2L .0202 standards are provided for reference only. The parameters tested are not bound by state groundwater or surface water standards. The leachate is conveyed to the station's ash impoundment, which discharges via a NPDES permitted outfall. All laboratory analytical and field results are provided as Attachments 1 and 2, respectively.

Duke Energy personnel sample landfill leachate at Allen Steam Station's RAB Ash Landfill semi-annually during March and September. The next landfill leachate sampling event will occur during March 2014 with documentation to follow.

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

Sincerely,

A handwritten signature in black ink that reads "Sean DeNeale".

Sean DeNeale, Engineer II
Environmental Services

Cc: Mr. Don Scruggs – Allen Steam Station
Mrs. Kim Hutchinson – Duke Energy Corporation

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):
 Duke Energy Corporation

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:
 Name: Sean DeNeale Phone: (704) 382-4761
 E-mail: Sean.DeNeale@duke-energy.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Retired Ash Basin (RAB) Ash Landfill Duke Energy Allen Steam Station	253 Plant Allen Rd. Belmont, NC 28012	36-12	.0500	September 26, 2013

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) _____
 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.

Kimberlee Hutchinson, PE Engineer (980) 373-2779
 Facility Representative Name (Print) Title (Area Code) Telephone Number
Kimberlee Hutchinson 10/23/2013 Affix NC Licensed Professional Geologist Seal
 Signature Date

Duke Energy Corporation, Mail Code EC13K, P.O. Box 1006, Charlotte, NC 28201-1006
 Facility Representative Address

#F-0566
 NC PE Firm License Number (if applicable effective May 1, 2009)

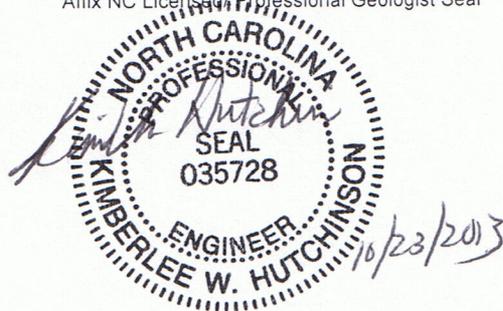


Table 1
 Allen Steam Station
 Retired Ash Basin (RAB) Ash Landfill (Permit No. 36-12)
 Leachate Analytical Data

	15A NCAC 2L .0202 Standard	Analytical Result (ug/L)	
Constituent	(ug/L)	09/26/2013	
		Cell 1	Cell 2
Arsenic	10	329	28.6
Barium	700	53	41
Boron	700	44,800	5,460
Cadmium	2	10.1	< 10
Chloride	250 mg/L	47 mg/L	4.8 mg/L
Chromium	10	< 5	< 5
Copper	1 mg/L	0.129 mg/L	0.041 mg/L
Fluoride	2 mg/L	3.3 mg/L	1.1 mg/L
Iron	300	397	168
Lead	15	< 10	< 10
Manganese	50	21,600	5,340
Mercury	1	0.06	< 0.05
Nickel	100	807	81
Nitrate (as N)	10 mg-N/L	8.9 mg-N/L	2.4 mg-N/L
pH	6.5-8.5	3.97	4.01
Selenium	20	1,370	158
Silver	20	< 5	< 5
Sulfate	250 mg/L	2,900 mg/L	630 mg/L
Temperature (°C)	n/a	21.23	22.76
TDS	500 mg/L	4,100 mg/L	920 mg/L
Zinc	1 mg/L	1.01 mg/L	0.122 mg/L

NOTE: 15A NCAC 2L .0202 Standards are provided only for reference. Analytical results are for landfill leachate, which is **NOT** bound by state groundwater or surface water standards. Landfill leachate is conveyed to the station's ash impoundment, which discharges via a NPDES permitted outfall.

Attachment 1

Allen Retired Ash Basin (RAB) Ash Landfill

Semi-Annual Monitoring Event

Leachate Analytical Results

September 26, 2013



Analytical Laboratory

13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: J13090093
Project Name: GW LEACHATE
Customer Name(s): Chuck Campbell, S. DeNeale, D. Scruggs, T. Hunsucke
Customer Address: 253 Plant Allen Road
Belmont, NC 28012

Lab Contact: Jason C Perkins Phone: 980-875-5348

Report Authorized By: JCP7132
(Signature) (111773) Digitally signed by JCP7132 (111773)
DN: dc=com, dc=duke-energy, dc=ent,
dc=nam, ou=Accounts, ou=Personal,
ou=PNTransitional, cn=JCP7132 (111773)
Date: 2013.10.11 15:09:41 -0400 **Date:** 10/11/2013
Jason C Perkins

Program Comments:

Please contact the Program Manager (Jason C Perkins) with any questions regarding this report.

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted. Subcontracted data included on the Duke Certificate of Analysis is to be used as information only. Certified vendor results can be found in the subcontracted lab final report. Duke Energy Analytical Laboratory subcontracts analyses to other vendor laboratories that have been qualified by Duke Energy to perform these analyses except where noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2013021443	ALLEN	26-Sep-13 10:00 AM	LSC	LEACHATE LCS-CELL 1
2013021444	ALLEN	26-Sep-13 10:40 AM	LSC	LEACHATE LCS-CELL 2
2013021445	ALLEN	26-Sep-13 10:50 AM	LSC	FIELD BLANK
3 Total Samples				

Technical Validation Review

Checklist:

- COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures). Yes No
- All Results are less than the laboratory reporting limits. Yes No
- All laboratory QA/QC requirements are acceptable. Yes No

Report Sections Included:

- Job Summary Report
- Sample Identification
- Technical Validation of Data Package
- Analytical Laboratory Certificate of Analysis
- Analytical Laboratory QC Report
- Sub-contracted Laboratory Results
- Customer Specific Data Sheets, Reports, & Documentation
- Customer Database Entries
- Chain of Custody
- Electronic Data Deliverable (EDD) Sent Separatel

Reviewed By: DBA Account

Date: 10/11/2013

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13090093

Site: LEACHATE LCS-CELL 1
Collection Date: 26-Sep-13 10:00 AM

Sample #: 2013021443
Matrix: GW_WW

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>								
Chloride	47	mg/L		1	10	EPA 300.0	09/27/2013 13:23	BGN9034
Fluoride	3.3	mg/L		1	10	EPA 300.0	09/27/2013 13:23	BGN9034
Nitrate	39	mg/L		1	10	EPA 300.0	09/27/2013 13:23	BGN9034
Nitrate as N	8.9	mg-N/L		0.023	1	EPA 300.0	09/27/2013 13:23	BGN9034
Sulfate	2900	mg/L		50	500	EPA 300.0	09/27/2013 13:23	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	0.06	ug/L		0.05	1	EPA 245.1	10/04/2013 09:38	DKJOHN2
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.053	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
Boron (B)	44.8	mg/L		0.05	1	EPA 200.7	10/03/2013 12:05	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
Copper (Cu)	0.129	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
Iron (Fe)	0.397	mg/L		0.01	1	EPA 200.7	10/03/2013 12:05	MHH7131
Manganese (Mn)	21.6	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
Nickel (Ni)	0.807	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
Zinc (Zn)	1.01	mg/L		0.005	1	EPA 200.7	10/03/2013 12:05	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	329	ug/L		10	10	EPA 200.8	10/02/2013 12:45	DJSULL1
Cadmium (Cd)	10.1	ug/L		10	10	EPA 200.8	10/02/2013 12:45	DJSULL1
Lead (Pb)	< 10	ug/L		10	10	EPA 200.8	10/02/2013 12:45	DJSULL1
Selenium (Se)	1370	ug/L		10	10	EPA 200.8	10/02/2013 12:45	DJSULL1
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	4100	mg/L		25	1	SM2540C	09/30/2013 14:25	DSBAKE1

Site: LEACHATE LCS-CELL 2
Collection Date: 26-Sep-13 10:40 AM

Sample #: 2013021444
Matrix: GW_WW

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>								
Chloride	4.8	mg/L		0.1	1	EPA 300.0	09/27/2013 13:41	BGN9034
Fluoride	1.1	mg/L		0.1	1	EPA 300.0	09/27/2013 13:41	BGN9034
Nitrate	11	mg/L		0.2	2	EPA 300.0	09/27/2013 13:41	BGN9034
Nitrate as N	2.4	mg-N/L		0.023	1	EPA 300.0	09/27/2013 13:41	BGN9034
Sulfate	630	mg/L		10	100	EPA 300.0	09/27/2013 13:41	BGN9034

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13090093

Site: LEACHATE LCS-CELL 2
Collection Date: 26-Sep-13 10:40 AM

Sample #: 2013021444
Matrix: GW_WW

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	10/04/2013 09:40	DKJOHN2
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.041	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
Boron (B)	5.46	mg/L		0.05	1	EPA 200.7	10/03/2013 12:09	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
Copper (Cu)	0.041	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
Iron (Fe)	0.168	mg/L		0.01	1	EPA 200.7	10/03/2013 12:09	MHH7131
Manganese (Mn)	5.34	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
Nickel (Ni)	0.081	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
Zinc (Zn)	0.122	mg/L		0.005	1	EPA 200.7	10/03/2013 12:09	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	28.6	ug/L		10	10	EPA 200.8	10/02/2013 12:48	DJSULL1
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	10/02/2013 12:48	DJSULL1
Lead (Pb)	< 10	ug/L		10	10	EPA 200.8	10/02/2013 12:48	DJSULL1
Selenium (Se)	158	ug/L		10	10	EPA 200.8	10/02/2013 12:48	DJSULL1
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	920	mg/L		25	1	SM2540C	09/30/2013 14:25	DSBAKE1

Site: FIELD BLANK
Collection Date: 26-Sep-13 10:50 AM

Sample #: 2013021445
Matrix: GW_WW

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>								
Chloride	< 0.1	mg/L		0.1	1	EPA 300.0	09/27/2013 10:51	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	09/27/2013 10:51	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 300.0	09/27/2013 10:51	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 300.0	09/27/2013 10:51	BGN9034
Sulfate	< 0.1	mg/L	B2	0.1	1	EPA 300.0	09/27/2013 10:51	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	10/04/2013 09:43	DKJOHN2

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13090093

Site: FIELD BLANK

Collection Date: 26-Sep-13 10:50 AM

Sample #: 2013021445

Matrix: GW_WW

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	10/03/2013 11:42	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
Iron (Fe)	< 0.01	mg/L		0.01	1	EPA 200.7	10/03/2013 11:42	MHH7131
Manganese (Mn)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	10/03/2013 11:42	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	10/02/2013 13:07	DJSULL1
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	10/02/2013 13:07	DJSULL1
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	10/02/2013 13:07	DJSULL1
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	10/02/2013 13:07	DJSULL1

Qualifiers:

- B2** Target analyte was detected in blank(s) at a concentration greater than ½ the reporting limit but less than the reporting limit. Analyte concentration in sample is valid and may be used for compliance purposes.

Attachment 2

Allen Retired Ash Basin (RAB) Ash Landfill

Semi-Annual Monitoring Event

Leachate Field Results

September 26, 2013

**ALLEN STEAM STATION
LEACHATE COLLECTION SYSTEM
GROUNDWATER MONITORING FIELD DATA**

DATE	WELL NUMBER	WELL DEPTH (feet)	DEPTH TO WATER (feet)	ODOR	WELL VOL (gal)	EVAC VOL (gal)	COMP EVAC (yes/no)	TEMPERATURE (deg C)	pH (units)	SPEC COND (umho/cm)	TURBIDITY (ntu)
9/26/2013	LCS - CELL 1	N/A	N/A	N/A	N/A	4.00	N/A	21.23	3.97	4450	12.4
9/26/2013	LCS - CELL 2	N/A	N/A	N/A	N/A	4.00	N/A	22.76	4.01	1068	4.2