

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):

HDR Engineering, Inc. of the Carolinas (Consultant)

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

Name: Ian Holdeman Phone: (704) 338-6839
 E-mail: ian.holdeman@hdrinc.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 Belews Creek Steam Station FGD Residue Landfill	3195 Pine Hall Road Belews Creek, NC	8505	.0500	November 4th, 2015

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.

William M. Miller Senior Engineer (828) 891-6296
 Facility Representative Name (Print) Title (Area Code) Telephone Number
 Affix NC Licensed/ Professional Geologist Seal

Signature William M. Miller Date 1/8/2016

440 S. Church Street Suite 1000, Charlotte, NC 28202

Facility Representative Address

F-0116

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



William M. Miller 1/8/2016

FGD Residue Landfill Permit No. 8505

Semiannual Groundwater Monitoring Report

November 2015 Sampling Event

Belews Creek Steam Station

February 2, 2016





Report Verification

PROJECT: SEMIANNUAL GROUNDWATER MONITORING REPORT
BELEWS CREEK STEAM STATION
FGD RESIDUE LANDFILL
PERMIT NO. 8505

TITLE: NOVEMBER 2015 SAMPLING EVENT

This document has been reviewed for accuracy and quality commensurate with the intended application.

Prepared by:  Date: 1/8/2016

Checked by: William M. Miller Date: 1/8/2016

Approved by: Brooke Ahrens Date: 1/8/2016

Project Manager: Brooke Ahrens, PE

Professional Engineer Seal:



HDR Engineering, Inc. of the Carolinas
440 South Church St., Suite 1000
Charlotte, NC 28202
North Carolina Engineering Firm Number F-0116



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- A. Field Sampling Forms
- B. Laboratory Report and Chain-of-Custody Forms

Section 1 – Background

The flue gas desulfurization (FGD) residue landfill is located at the Duke Energy Carolinas, LLC (Duke Energy) Belews Creek Steam Station, in Stokes County, North Carolina. The FGD residue landfill is permitted to receive FGD residue (gypsum) from Belews Creek Steam Station operations. The landfill is permitted under the North Carolina Department of Environmental Quality (NCDEQ) Solid Waste Permit No. 8505.

The FGD residue landfill is located south of the Belews Creek plant, on land between two arms of the Belews Lake. The West Belews Creek arm of the lake is located west of the landfill site and the East Belews Creek arm of the lake is located east of the site. Craig Road is located to the west of the landfill. The FGD residue landfill and nearby surrounding area are depicted on Figure 1.

The landfill consists of four cells contained in an area of approximately 24 acres. The adjacent stormwater basin occupies an area of approximately 2.4 acres and is used to manage leachate and stormwater collected from the landfill. The landfill has an engineered liner system consisting of a leachate collection system, underlain by a high-density polyethylene (HDPE) geomembrane liner, underlain by a geo-synthetic clay liner.

The subsurface conditions in the landfill area consist of residual soils, saprolite, partially weathered rock, and bedrock, as described in the Water Quality Monitoring Plan.¹

As is typical for groundwater systems located in the Piedmont region, groundwater at the landfill site occurs within the residuum, saprolite, partially weathered rock, and shallow fractured bedrock under unconfined aquifer conditions. The groundwater flow in the area of the landfill is generally from areas of higher topography, located to the east of the landfill, to the west and to the northwest of the landfill, towards Belews Lake.

¹ Water Quality Monitoring Plan FGD Scrubber Residue Landfill Belews Creek Steam Station, December 07, 2007.



The monitoring system for the landfill consists of the following:

- Monitoring Wells²: BC-20
BC-21
BC-22
BC-23A
BC-25
BC-26
BC-27
BC-28
BC-29
BC-30
BC-31
BC-32³
- Observation Well: BC-7
- Surface Water: SW-1
- Leachate Sample: Leachate

The monitoring system for the landfill is shown on Figure 2. A summary of monitoring well construction information is presented in Table 1. Monitoring wells BC-23A and BC-28 are considered to represent background groundwater quality, according to the Water Quality Monitoring Plan. The groundwater monitoring locations are sampled on a semi-annual basis and the results compared to groundwater quality standards found in 15A NCAC .02L .0202(g) (2L Standards).

Observation well BC-7 is used for water level measurements only. Monitoring wells are used to monitor groundwater quality and to measure groundwater levels.

SW-1 is a groundwater seep located to the east of well BC-28. When water is present, it emanates from the ground just above the sampling location. SW-1 analytical results are compared to 2L Standards. This surface water feature drains to Belews Lake.

² BC-25 and BC-27 were recently (as of June 2015) converted to stick-up wells in an effort to reduce TDS and obtain better samples.

³ Monitoring well BC-32 was installed in August 2013, as part of a groundwater assessment being conducted at the landfill. The monitoring well is not included in the Water Quality Monitoring Plan, but the analytical results from the well are included in this landfill groundwater monitoring report.

Section 2 – Methods

2.1 Sampling and Analysis Methods

Groundwater sampling and documentation of sampling activities were performed by Duke Energy personnel (Duke Energy Carolinas Field Certification #5193) in accordance with the North Carolina Solid Waste Management Guidelines. Copies of the field sampling forms are included in Appendix A. The parameters and constituents sampled were selected by Duke Energy and the NCDEQ Division of Solid Waste and were analyzed by the Duke Energy Analytical Laboratory (North Carolina Laboratory Certification #248) and provided to HDR by Duke Energy. The laboratory report and chain-of-custody forms are included in Appendix B.

The groundwater samples were analyzed using the following analytical methods:

- Barium, boron, chromium, copper, iron, manganese, nickel, silver, and zinc using U.S. Environmental Protection Agency (EPA) Method 200.7
- Arsenic, cadmium, lead, and selenium by EPA Method 200.8
- Chloride, fluoride, nitrate as nitrogen, and sulfate using EPA Method 300.0
- Mercury using EPA Method 245.1
- Total Dissolved Solids using Standard Method (SM) 2540C

2.2 Statement of Work

HDR completed the following tasks:

- Received field sampling information provided by Duke Energy (performed by Duke Energy personnel) for monitoring wells BC-20, BC-21, BC-22, BC-23A, BC-25, BC-26, BC-27, BC-28, BC-29, BC-30, BC-31, BC-32, surface water sampling location SW-1, and the leachate sampling location. The samples were collected on November 4, 2015 and HDR received the data on November 23, 2015.
- Reviewed the laboratory analytical results for the samples noted above. The Electronic Data Deliverable (EDD), provided by Duke Energy, was adapted to conform to the format requirements of the NCDEQ EDD template. HDR added an italicized J data qualifier (*J*) to indicate a detected concentration that equals or is greater than the laboratory's method reporting limit (MRL), but less than the Solid Waste Section Limit⁴ (SWSL), and retained the laboratory-supplied qualifier J to indicate values that equal or are greater than the laboratory's method detection limit (MDL) but are less than the MRL. A copy of the original EDD is retained in HDR's files.

⁴ The Solid Waste Section Limit (SWSL) is defined by NCDEQ as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy. The SWSL is the concentration below which reported results must be qualified as estimated. NCDEQ Division of Waste Management Memorandum dated February 23, 2007.



- Developed a generalized groundwater surface contour map using map data and groundwater elevation data supplied by Duke Energy.
- Prepared and submitted this Semiannual Groundwater Monitoring Report to Duke Energy.

Section 3 – Results

3.1 Site Groundwater Flow

Generalized groundwater surface contours and groundwater flow direction arrows for the site are shown on Figure 3. These contours were developed using groundwater elevations measured at the wells on the date of sampling. Calculated groundwater flow velocities are presented on Table 2.

Based on the groundwater elevations measured at the wells on the date of sampling, groundwater flow in the area of the landfill is generally from areas of higher topography, located to the east of the landfill, to the west and to the northwest of the landfill, towards Belews Lake.

3.2 Analytical Results

A summary of the field data is presented in Table 3.

The field and analytical results of groundwater and surface water sampling are summarized in Table 4. The analysis results for these locations are compared to the 2L Standards. Concentrations with values that attain or exceed the 2L Standards are noted on Table 4 by bold font. A summary of the analytical results that attain or exceed the 2L Standards and a preliminary analysis of the cause and significance of the exceedances are presented in Table 5.

The field and analytical results of leachate sampling are summarized in Table 6.

Concentrations with values that equal or are greater than the SWSLs are noted on Tables 4 and 6 by gray-shaded cells.

Selected samples were diluted as is normal laboratory practice to bring samples to the calibrated range of the analysis. Specifics regarding the samples that were diluted, including the dilution amount, are reported in the EDD and the laboratory report.

HDR previously prepared and submitted an assessment to NCDEQ for exceedances of 2L Standards at this landfill (Groundwater Assessment Belews Creek Steam Station FGD Residue Landfill, Permit No. 8505. October 5, 2012).

The report assessed the exceedances of the 2L Standards at wells BC-20, BC-21, BC-23A, BC-26, BC-27, BC-29, and BC-31 and at surface water sampling location SW-1. The assessment report concluded for the period of analytical results reviewed that:

- the source of iron exceedances reported in BC-20, BC-21, BC-23A, BC-26, BC-27, BC-29, and BC-31 appear to be related to turbidity introduced from naturally occurring sources,
- the source of manganese exceedances reported in BC-27 appear to be related to turbidity introduced from naturally occurring sources,
- the manganese results at BC-21 do not appear to be related to turbidity, and

- the iron and manganese exceedances at surface water sampling location SW-1 are from naturally occurring sources and are not related to impacts from the landfill.

The report assessed 2L Standard exceedances for iron, sulfate, and total dissolved solids (TDS) at monitoring well BC-25. HDR recommended installing an additional monitoring well at the review boundary between BC-25 and the landfill to further delineate the sulfate and TDS concentrations in this area and improve the understanding of groundwater flow and quality near BC-25. HDR further recommended that BC-20 and BC-21 be re-sampled when the new monitoring well was sampled.

In a letter dated November 28, 2012⁵ to Mr. Ed Sullivan, P.E., of Duke Energy, the NCDEQ Solid Waste Section approved the recommendations presented in the groundwater assessment report dated October 5, 2012.

Monitoring well BC-32 was installed in August 2013, and HDR prepared and submitted a supplemental groundwater assessment to NCDEQ (Supplemental Groundwater Assessment Belews Creek Steam Station FGD Residue Landfill, Permit No. 8505. June 4, 2014).

The supplemental groundwater assessment report concluded:

- although it is not possible to eliminate leakage through the liner system as a cause for 2L Standard exceedances, leakage through the liner system is not the likely source of 2L Standard exceedances, and
- increases in precipitation runoff received by non-contact stormwater basins SB-6 and SB-7, due to the process of filling Cell 1, may have caused deposited FGD residue to be subjected to increased infiltration into the groundwater at these basins. It appears that an increase in surface runoff and infiltration of gypsum into the groundwater in this area may be the source of exceedances of sulfate, TDS, and selenium.

As part of the supplemental groundwater assessment report HDR recommended:

- monitoring well BC-32 should continue to be sampled as part of the groundwater monitoring program for the FGD Residue Landfill,
- if concentrations of sulfate and TDS decrease to below the 2L Standard in monitoring wells BC-25 and BC-32 and remain below the 2L Standard for a minimum of two sampling events, discontinue groundwater monitoring at BC-25 and incorporate monitoring well BC-32 into the groundwater monitoring program for the FGD Residue Landfill, and
- if the concentrations of sulfate and TDS remain above the 2L Standards in monitoring wells BC-25 and BC-32 for the next three sampling events, an additional assessment should be conducted to identify the sources of the exceedances.

⁵ North Carolina Department of Environment and Natural Resources, Division of Waste Management. November 28, 2012, Groundwater Assessment Report Response. Duke Energy – Belews Creek FGD Landfill, DOC ID 17761.

This is the third groundwater monitoring event since the completion of the supplemental groundwater assessment (November 2014, May 2015, and November 2015).

The sulfate and TDS concentrations in monitoring wells BC-25 and BC-32 have been greater than the 2L Standards during last three sampling events, with the concentrations of these parameters generally increasing in both of the monitoring wells.

The sulfate concentration measured in monitoring well BC-20 was less than the 2L Standard during the November 2014 event. When measured in May of 2015, the sulfate concentration in monitoring well BC-20 increased to a concentration greater than the 2L Standard where it has remained during the November 2015 sampling event.

The selenium concentration in BC-21 was measured above the 2L standard in August 2013 but below the standard in all events before and after that event.

Selenium has been measured at concentrations greater than the 2L standard during both May and November 2015 sampling events (at 20.3 µg/L and 21.9 µg/L, respectively).

The sulfate concentration measured in monitoring well BC-21 has been greater than the 2L Standard during the last four sampling events.

Based on the results of the sampling events conducted since the June 2014 Supplemental Groundwater Assessment, HDR recommend that Duke Energy contact DEQ and provide a plan for further assessment of the groundwater exceedances at the landfill.

Figures



NOTES:

1. SOURCE: USGS TOPOGRAPHIC MAP - BELEWS LAKE QUADRANGLE. CREATED 1971. REVISED 2010.
2. TOPOGRAPHIC MAP DOES NOT REFLECT REALIGNMENT OF CRAIG ROAD.

SCALE (FEET)
1000 0 1000 2000



HDR Engineering Inc.
of the Carolinas

440 S. Church St. Suite 1000
Charlotte, NC 28202-2075
704.338.6700

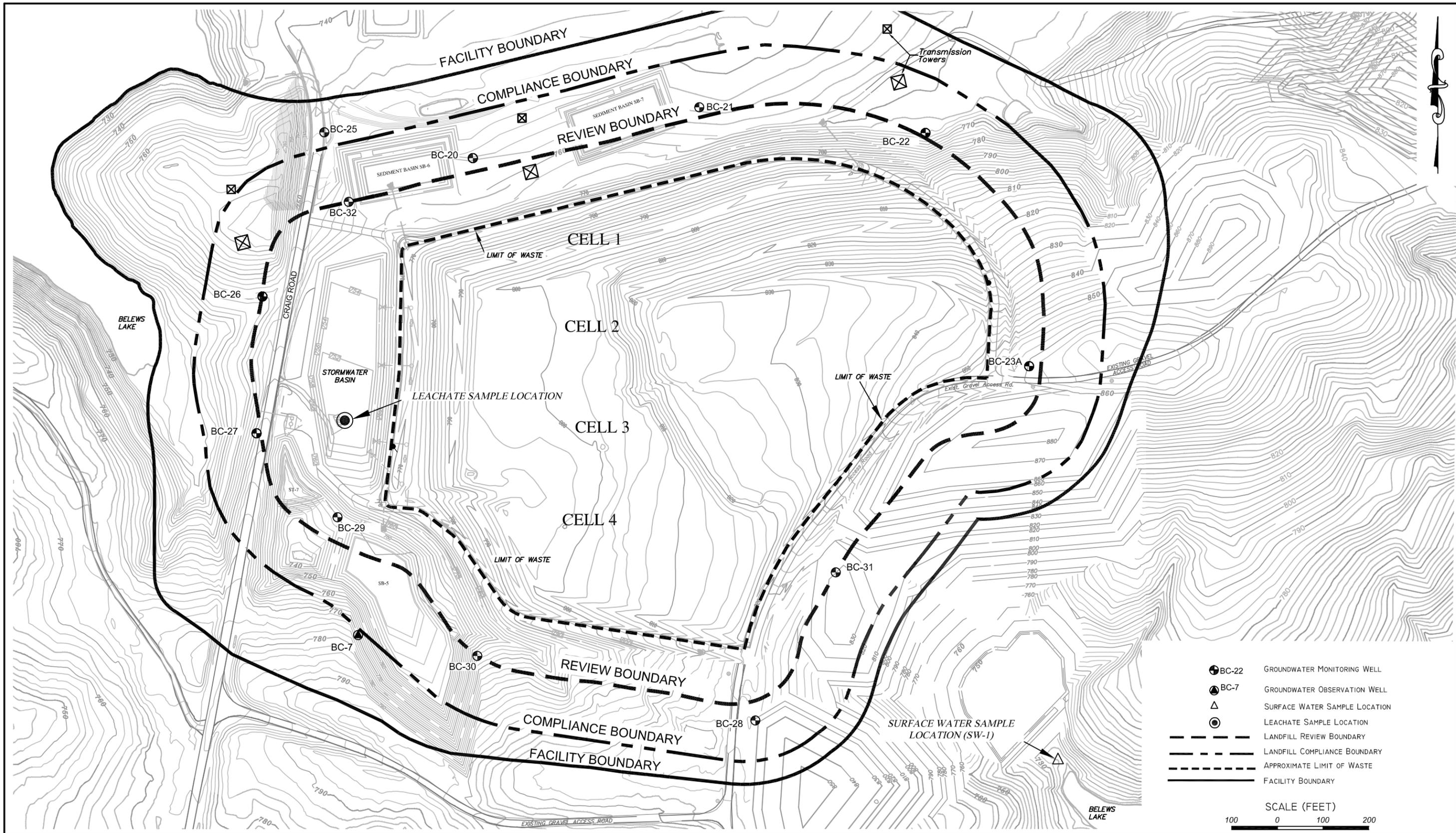
**SITE LOCATION MAP
BELEWS CREEK STEAM STATION
FGD RESIDUE LANDFILL**

PERMIT NO. 8505

DATE
FEBRUARY 2016

FIGURE

1



NOTE: BASE MAP PROVIDED BY DUKE ENERGY CAROLINAS, LLC. DATED MAY 21, 2015.



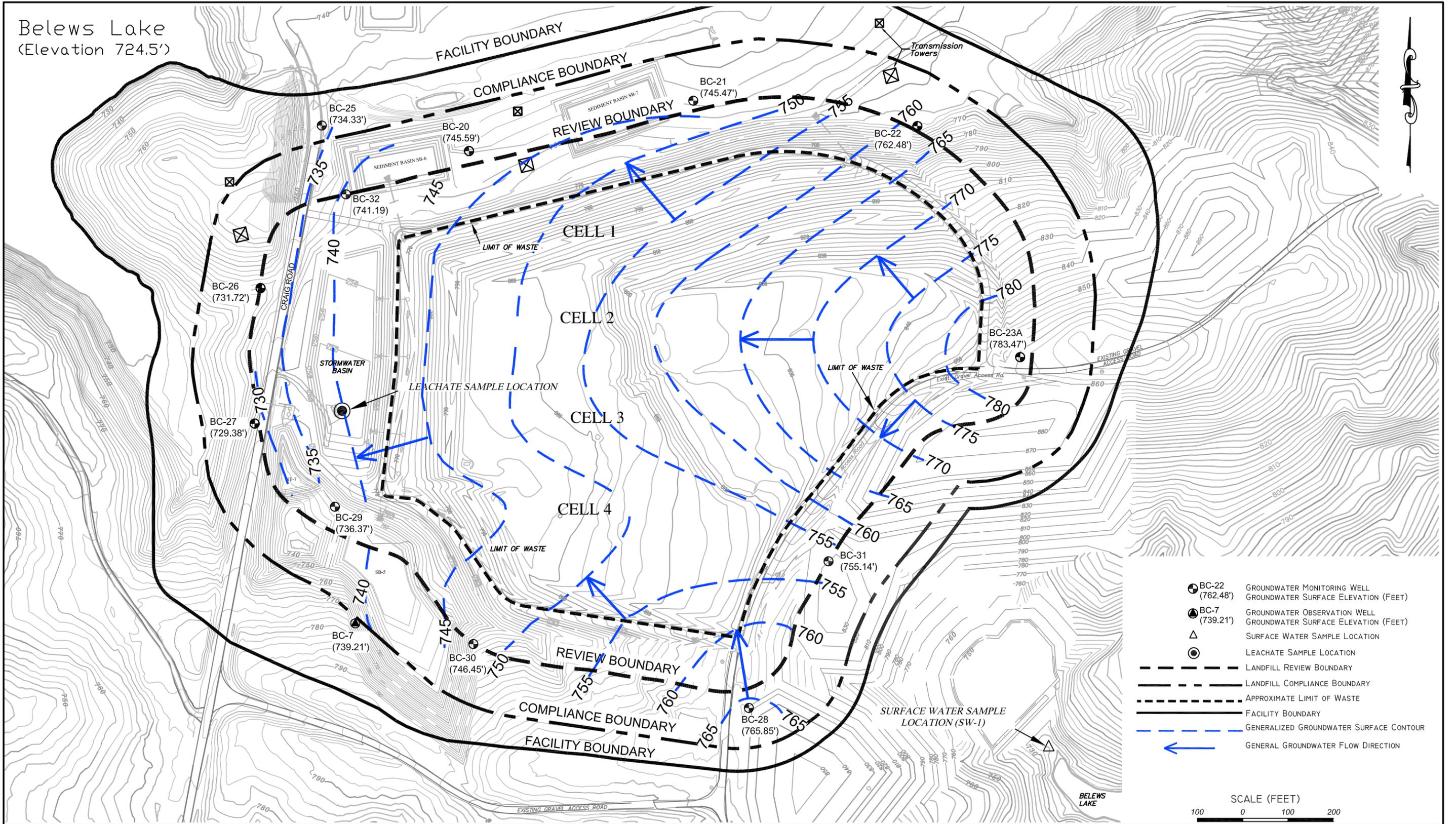
HDR Engineering Inc.
of the Carolinas
440 S. Church St. Suite 1000
Charlotte, NC 28202-2075
704.338.8700

**SAMPLE LOCATIONS
BELEWS CREEK STEAM STATION
FGD RESIDUE LANDFILL**

PERMIT NO. 8505

DATE
FEBRUARY 2016

FIGURE
2



NOTES:
 BASE MAP PROVIDED BY DUKE ENERGY CAROLINAS, LLC. DATED MAY 21, 2015.
 GROUNDWATER ELEVATIONS MEASURED ON NOVEMBER 4, 2015.



HDR Engineering Inc.
 of the Carolinas
 440 S. Church St. Suite 1000
 Charlotte, NC 28202-2075
 704.338.6700

**GENERALIZED GROUNDWATER SURFACE
 CONTOURS - NOVEMBER 2015
 BELEWS CREEK STEAM STATION
 FGD RESIDUE LANDFILL**
 PERMIT NO. 8505

DATE
 FEBRUARY 2016
 FIGURE
 3

Tables

Table 1 - Well Construction Information
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505

Well ID	Well Installation Date	Coordinates		TOC Elevation (ft.)	Ground Surface Elevation (ft.)	Well Stick-up Height Above Ground Surface (ft.)	Groundwater Elevation (ft.)	Depth to Water below TOC (ft.)	Total Well Depth below TOC (ft.)	Depth to Top of Screen from TOC (ft.)	Screened Interval below TOC (ft.)	Geology of Screened Interval	Well Diameter (in.)	Casing Type
		Latitude	Longitude											
BC-7	11/21/2002	36.2730787	-80.0588001	777.80	775.78	2.02	739.21	38.59	52.30	37.30	37.30 - 52.30	Bedrock	2	PVC
BC-20	8/31/2004	36.2759467	-80.0579852	757.22	754.58	2.64	745.59	11.63	24.22	14.22	14.22 - 24.22	Saprolite/PWR	2	PVC
BC-21	9/1/2004	36.2762661	-80.0563068	756.69	753.42	3.27	745.47	11.22	16.77	6.77	6.77 - 16.77	Saprolite	2	PVC
BC-22	9/2/2004	36.2761258	-80.0546255	765.91	763.72	2.19	762.48	3.43	13.00	3.00	3.00 - 13.00	Saprolite	2	PVC
BC-23A	9/2/2004	36.2747326	-80.0538373	863.79	862.56	1.23	783.47	80.32	101.21	76.21	76.21 - 101.21	PWR/Bedrock	2	PVC
BC-25	2/21/2006	36.2760911	-80.0590910	745.96	745.98	-0.02	734.33	14.10	23.15	8.15	8.15 - 23.15	Saprolite/PWR	2	PVC
BC-26	2/17/2006	36.2751022	-80.0595361	749.32	747.21	2.11	731.72	17.60	23.26	8.26	8.26 - 23.26	Saprolite	2	PVC
BC-27	2/20/2006	36.2742816	-80.0595706	761.88	761.96	-0.08	729.38	35.40	34.95	19.95	19.95 - 34.95	Saprolite	2	PVC
BC-28	2/15/2006	36.2725916	-80.0558439	818.09	816.02	2.07	765.85	52.24	60.20	45.20	45.20 - 60.20	Saprolite/PWR/BR	2	PVC
BC-29	10/29/2007	36.2737836	-80.0589625	753.18	751.41	1.77	736.37	19.83	22.30	7.30	7.30 - 22.30	Saprolite	2	PVC
BC-30	10/29/2007	36.2729612	-80.0579134	775.72	773.91	1.81	746.45	29.27	34.10	19.10	19.10 - 34.10	Saprolite/PWR	2	PVC
BC-31	10/30/2007	36.2734850	-80.0552573	816.40	813.43	2.97	755.14	61.26	83.30	63.30	63.30 - 83.30	PWR/Bedrock	2	PVC
BC-32	8/12/2013	36.2756757	-80.0589041	756.56	753.62	2.94	741.19	15.37	33.01	18.01	18.01 - 33.01	Saprolite/PWR	2	PVC

Notes:

1. TOC indicates top of casing.
2. ft. indicates feet.
3. in. indicates inches nominal diameter.
4. PVC indicates polyvinyl chloride.
5. PWR indicates partially weathered rock.
6. BR indicates bedrock.
7. Horizontal datum assumed to be NAD83.
8. Elevations based on NVGD 29 vertical datum.
9. Monitoring wells BC-25 and BC-27 are flush-mount monitoring wells.
10. BC-32 was originally surveyed in NAVD 88 vertical datum. Elevation presented in table was converted to NVGD 29 vertical datum.
11. Depth to groundwater was measured on November 4, 2015.
12. Information provided by Duke Energy Carolinas, LLC on November 23, 2015.

**Table 2 - Groundwater Flow Velocities
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505**

Well ID	Upgradient Groundwater Contour Elevation (ft)	Downgradient Groundwater Contour Elevation (ft)	Linear Distance Between Contours through Well (ft)	Hydraulic Gradient (ft/ft)	Hydraulic Conductivity (ft/day)	Effective Porosity (%/100)	Groundwater Velocity (ft/day)
BC-7	740	739	28	0.028	0.310	0.005	1.76
BC-20	750	745	246	0.020	0.411	0.259	0.03
BC-21	750	745	76	0.060	0.411	0.259	0.09
BC-23A	783	780	167	0.021	0.310	0.005	1.29
BC-25	735	734	23	0.029	0.411	0.259	0.05
BC-26	735	732	69	0.048	0.411	0.259	0.08
BC-27	735	729	90	0.063	0.411	0.259	0.10
BC-28	766	765	21	0.040	0.411	0.259	0.06
BC-29	740	736	70	0.052	0.411	0.259	0.08
BC-30	750	745	139	0.036	0.411	0.259	0.06
BC-31	755	750	451	0.011	0.310	0.005	0.71
BC-32	745	740	217	0.023	0.411	0.259	0.04

Notes:

1. Linear distance measured through monitoring wells is approximately perpendicular to groundwater contours.
2. At monitoring well locations where downgradient contours are not present, the groundwater elevation at the monitoring well is used as the downgradient groundwater elevation.
3. At monitoring well locations where upgradient contours are not present, the groundwater elevation at the monitoring well is used as the upgradient groundwater elevation.
4. Monitoring wells are not listed where insufficient information is available to calculate velocity.
5. Hydraulic gradients and groundwater velocities are approximate.
6. Hydraulic conductivity presented for the alluvium/soil/saprolite hydrostratigraphic layer is the geometric mean of the conductivity data in the HDR Conductivity Database (unpublished data from Piedmont Carolina sites with foliated/layered bedrock).
7. Hydraulic conductivity presented for the bedrock layer is the geometric mean of the conductivity data in the HDR Conductivity Database (unpublished data from Piedmont Carolina sites with foliated/layered bedrock).
8. Effective porosity presented for the alluvium/soil/saprolite hydrostratigraphic layer is the mean value estimated from grain size data using Fetter/Bear Diagrams.
9. Effective porosity for the bedrock layer is based on published values .
10. Hydraulic gradient and groundwater velocities calculated based on groundwater depth measured on November 4, 2015.

Table 3 - Field Data Parameters
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505

DATE	SAMPLE ID	WELL DEPTH (feet)	DEPTH TO WATER (feet)	WATER ELEV. (feet)	APPEARANCE	ODOR	PURGE METHOD	PUMP RATE (mL/min)	WELL VOLUME (gal)	EVAC VOLUME (gal)	EVAC (YES/NO)	TEMP (deg C)	SPECIFIC Conductance (µU/cm)	pH (SU)	TURBIDITY (NTU)	ORP (mV-NHE)	DO (mg/L)
11/4/2015	BC-7	52.30	38.59	739.21	N/A	N/A	LO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/4/2015	BC-20	24.22	11.63	745.59	Normal	None	LF	210	2.05	1.35	N/A	18.58	934	5.3	33.8	416	8.24
11/4/2015	BC-21	16.77	11.22	745.47	Normal	None	LF	210	0.91	0.85	N/A	18.30	921	5.1	1.8	439	7.49
11/4/2015	BC-22	13.00	3.43	762.48	Normal	None	CP	N/A	1.56	7.00	NO	16.78	125	5.6	2.8	409	5.51
11/4/2015	BC-23A	101.21	80.32	783.47	Normal	None	CP	N/A	3.41	7.00	NO	15.34	46	5.9	14.3	424	8.18
11/4/2015	BC-25	26.15	14.10	734.33	Normal	None	LF	200	1.97	1.30	N/A	19.07	2,090	5.3	18.7	346	5.93
11/4/2015	BC-26	23.26	17.60	731.72	Normal	None	LF	270	0.92	5.15	N/A	16.01	147	4.8	9.5	356	3.82
11/4/2015	BC-27	38.33	35.40	729.38	Normal	None	LF	120	0.48	1.05	N/A	16.86	75	5.1	3.7	223	0.70
11/4/2015	BC-28	60.20	52.24	765.85	Normal	None	LF	150	1.30	0.65	N/A	15.75	60	5.8	2.8	382	6.73
11/4/2015	BC-29	25.32	19.83	736.37	Normal	None	LF	210	0.90	1.35	N/A	16.31	55	5.1	8.2	451	2.18
11/4/2015	BC-30	34.10	29.27	746.45	Normal	None	LF	180	0.79	2.00	N/A	14.84	75	5.5	8.1	403	7.54
11/4/2015	BC-31	83.30	61.26	755.14	Normal	None	LF	130	3.59	1.30	N/A	16.03	106	6.1	7.1	325	5.07
11/4/2015	BC-32	33.01	15.37	741.19	Normal	None	LF	260	2.88	1.20	N/A	16.83	1,484	5.4	2.0	402	6.28
11/4/2015	BC-SW1	N/A	N/A	N/A	Normal	None	N/A	N/A	N/A	N/A	N/A	15.84	344	6.3	20.1	272	7.99
11/4/2015	BC-LEACHATE	N/A	N/A	N/A	Normal	None	N/A	N/A	N/A	N/A	N/A	16.77	2,799	6.4	1.1	366	6.33

Notes:

- Purge Methods; LF=Low Flow, CP=Conventional Purge (3-5 well volumes), NP=No Purge (HydraSleeve), LO=Level Only. Pump rate applicable to LF purging only.
- Field sampling performed by Duke Energy Carolinas, LLC personnel.
- EVAC indicates whether the water level in the well was drawn down to the level of the pump during purging.
- µU/cm indicates micromhos per centimeter.
- SU indicates Standard Units.
- NTU indicates Nephelometric Turbidity Units.
- mV-NHE indicates millivolts-Normal Hydrogen Electrode.
- mL/min indicates milliliters per minute.
- mg/L indicates milligrams per liter.
- N/A indicates not applicable.
- Observation well BC-7 was gauged for depth to water only.
- Information provided by Tim Hunsucker of Duke Energy Carolinas, LLC on November 23, 2015.

Table 4 - Field and Analytical Results
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505

Sample Date: November 4, 2015				Laboratory Certificate Codes: Duke Energy Carolinas Field #5193 Duke Energy Analytical Laboratory #248										
Field Sampling performed by Duke Energy Carolinas, LLC				Monitoring Wells							MDL	SWSL	15A NCAC 2L Standard	Federal MCL
Parameter	SWS ID	Units	Certificate Code	8505 BC-20	8505 BC-21	8505 BC-22	8505 BC-23A	8505 BC-25	8505 BC-26	8505 BC-27				
Field pH	320	SU	5193	5.3	5.1	5.6	5.9	5.3	4.8	5.1	-	NE	6.5-8.5	6.5-8.5*
Field Specific Conductance	323	µS/cm	5193	934	921	125	46	2,090	147	75	-	NE	NE	NE
Temperature	325	°C	5193	18.58	18.30	16.78	15.34	19.07	16.01	16.86	-	NE	NE	NE
Top of Casing	328	feet	-	757.22	756.69	765.91	863.79	748.43	749.32	764.78	-	NE	NE	NE
Depth to Water	318	feet	-	11.63	11.22	3.43	80.32	14.10	17.60	35.40	-	NE	NE	NE
Water Elevation	319	feet	-	745.59	745.47	762.48	783.47	734.33	731.72	729.38	-	NE	NE	NE
Well Depth	411	feet	-	24.22	16.77	13.00	101.21	26.15	23.26	38.33	-	NE	NE	NE
Arsenic	14	µg/L	248	0.234 J	1.64 J'	0.131 J	0.111 J	0.441 J	0.101 J	0.613 J	0.078	10	10	10
Barium	15	µg/L	248	53.9 J'	19.6 J'	85.6 J'	35.1 J'	70.3 J'	287	34.3 J'	0.1	100	700	2,000
Boron	428	µg/L	248	22.7 J	16.2 J	20 J	3.3 U	30.6 J	4.81 J	3.3 U	3.3	NE	700	NE
Cadmium	34	µg/L	248	0.895 J	0.473 J	0.139 J	0.101 U	0.733 J	0.325 J	0.101 U	0.101	1	2	5
Chloride	301	µg/L	248	3,270	5,510	4,310	2,320	47,700	14,700	9,840	110	NE	250,000	250,000*
Chromium	51	µg/L	248	0.904 J	0.551 J	0.613 J	1.46 J	1.89 J	0.5 U	0.5 U	0.5	10	10	100
Copper	54	µg/L	248	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	10	1,000	1,300
Fluoride	312	µg/L	248	240 J	236 J	59 J	83.9 J	461 J	79.7 J	75 J	85	2,000	2,000	4,000
Iron	340	µg/L	248	725	12.3 J'	203 J'	445	1,250	313	3,170	1.3	300	300	300*
Lead	131	µg/L	248	0.137 J	0.065 U	0.065 U	0.149 J	0.274 J	0.112 J	0.0899 J	0.065	10	15	15
Manganese	342	µg/L	248	20.3 J'	89	60.4	7.62 J'	99.2	28.4 J'	268	0.2	50	50	50*
Mercury	132	µg/L	248	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006	0.2	1	2
Nickel	152	µg/L	248	15.8 J'	1.73 J	0.872 J	0.5 U	46.9 J'	7.48 J'	0.5 U	0.5	50	100	NE
Nitrate (as Nitrogen)	303	µg/L	248	2,100 J'	3,280 J'	1,130 J'	5.4 U	1,740 J'	5,450 J'	5.4 U	5.4	10,000	10,000	10,000
Selenium	183	µg/L	248	2.24 J'	1.77 J'	0.289 J	0.092 U	21.9	0.117 J	0.123 J	0.092	10	20	50
Silver	184	µg/L	248	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7	10	20	100*
Sulfate	315	µg/L	248	492,000	453,000	25,300 J'	227 J'	1,150,000	12,800 J'	134 J'	1800	250,000	250,000	250,000*
Total Dissolved Solids	311	µg/L	248	780,000	719,000	105,000	64,000	1,810,000	114,000	72,000	16,700	NE	500,000	500,000*
Zinc	213	µg/L	248	18.7	4.46 J	2.6 U	3.93 J	14.4	52.2	6.26 J'	2.6	10	1,000	5,000*

Notes:

- Concentrations presented in micrograms per liter (µg/L).
- SWS ID is the Solid Waste Section Identification Number.
- MDL is the laboratory method detection limit. The MDL values presented are for samples not diluted by the laboratory during analysis.
- SWSL is the Solid Waste Section Limit. NCDEQ defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L. 0202 Groundwater Quality Standards, last amended on April 1, 2013.
- MCL is the Federal Maximum Contaminant Level as found in 40 CFR, Subpart G, §141.62.
- * Concentration listed is a secondary maximum contaminant level (SMCL). SMCLs are established by EPA in the National Secondary Drinking Water Regulations as found in 40 CFR §143.3.
- NE indicates not established. NA indicates not analyzed. Blank cells indicate that there is no information relevant to the respective row.
- Grayed values indicate values that equal or are greater than the SWSL.
- Bold values indicate values that attain or exceed the 15A NCAC 2L Standard.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used to identify results not detected at concentrations which equal the laboratory's MDL. "J" is used to identify estimated concentrations which equal or are greater than the MDL but are less than the laboratory's method reporting limit (MRL). An italicized J'-flag is a data qualifier, added by HDR to indicate concentrations which equal or are greater than the laboratory's MRL but are less than the SWSL.
- SU indicates Standard Units.
- µS/cm indicates micromhos per centimeter.
- According to the Constituent Look-up webpage on the NCDEQ Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- Analytical results obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on November 23, 2015.

Table 4 - Field and Analytical Results
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505

Sample Date: November 4, 2015				Laboratory Certificate Codes:										
Field Sampling performed by Duke Energy Carolinas, LLC				Duke Energy Carolinas Field #5193 Duke Energy Analytical Laboratory #248										
Parameter	SWS ID	Units	Certificate Code	Monitoring Wells					8505 SW-1	Field Blank	MDL	SWSL	15A NCAC 2L Standard	Federal MCL
				8505 BC-28	8505 BC-29	8505 BC-30	8505 BC-31	8505 BC-32						
Field pH	320	SU	5193	5.8	5.1	5.5	6.1	5.4	6.3	-	-	NE	6.5-8.5	6.5-8.5*
Field Specific Conductance	323	µI/cm	5193	60	55	75	106	1484	344	-	-	NE	NE	NE
Temperature	325	°C	5193	15.75	16.31	14.84	16.03	16.83	15.84	-	-	NE	NE	NE
Top of Casing	328	feet	-	818.09	756.20	775.72	816.40	756.56	-	-	-	NE	NE	NE
Depth to Water	318	feet	-	52.24	19.83	29.27	61.26	15.37	-	-	-	NE	NE	NE
Water Elevation	319	feet	-	765.85	736.37	746.45	755.14	741.19	-	-	-	NE	NE	NE
Well Depth	411	feet	-	60.20	25.32	34.10	83.30	33.01	-	-	-	NE	NE	NE
Arsenic	14	µg/L	248	0.0999 J	0.119 J	0.146 J	0.204 J	0.335 J	0.413 J	0.113 J	0.078	10	10	10
Barium	15	µg/L	248	29 J'	130	20.8 J'	23.8 J'	58.3 J'	60.1 J'	0.1 U	0.1	100	700	2,000
Boron	428	µg/L	248	3.3 U	3.64 J	3.3 U	3.3 U	11.6 J	10.3 J	3.3 U	3.3	NE	700	NE
Cadmium	34	µg/L	248	0.101 U	0.101 U	0.101 U	0.101 U	0.285 J	0.101 U	0.101 U	0.101	1	2	5
Chloride	301	µg/L	248	1,750	5,030	3,870	1,930	2,170	3,570	22 U	110	NE	250,000	250,000*
Chromium	51	µg/L	248	0.65 J	0.594 J	1.19 J	1.18 J	0.5 U	0.676 J	0.5 U	0.5	10	10	100
Copper	54	µg/L	248	1.27 J	1 U	1 U	1 U	1 U	1 U	1 U	1	10	1,000	1,300
Fluoride	312	µg/L	248	92.5 J	83.1 J	82.3 J	128 J'	141 J	190 J	46.1 J	85	2,000	2,000	4,000
Iron	340	µg/L	248	51.2 J'	328	573	509	32.9 J'	1,860	1.49 J	1.3	300	300	300*
Lead	131	µg/L	248	0.065 U	0.0751 J	0.295 J	0.419 J	0.065 U	0.14 J	0.065 U	0.065	10	15	15
Manganese	342	µg/L	248	3.5 J	9.74 J'	8.73 J'	14.8 J'	13.3 J'	235	0.2 U	0.2	50	50	50*
Mercury	132	µg/L	248	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006	0.2	1	2
Nickel	152	µg/L	248	0.591 J	0.57 J	0.5 U	0.591 J	21.4 J'	1.02 J	0.5 U	0.5	50	100	NE
Nitrate (as Nitrogen)	303	µg/L	248	981 J'	316 J'	537 J'	827 J'	821 J'	101 J'	5.4 U	5.4	10,000	10,000	10,000
Selenium	183	µg/L	248	0.092 U	0.092 U	0.092 U	0.092 U	5.98 J'	0.281 J	0.092 U	0.092	10	20	50
Silver	184	µg/L	248	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7	10	20	100*
Sulfate	315	µg/L	248	338 J'	1,420 J'	685 J'	1,190 J'	854,000	133,000 J'	18 U	1,800	250,000	250,000	250,000*
Total Dissolved Solids	311	µg/L	248	73,000	62,000	85,000	97,000	1,270,000	242,000	NA	16,700	NE	500,000	500,000*
Zinc	213	µg/L	248	2.6 U	4.73 J	2.6 U	2.6 U	13.8	42.6	2.6 U	2.6	10	1,000	5,000*

Notes:

- Concentrations presented in micrograms per liter (µg/L).
- SWS ID is the Solid Waste Section Identification Number.
- MDL is the laboratory method detection limit. The MDL values presented are for samples not diluted by the laboratory during analysis.
- SWSL is the Solid Waste Section Limit. NCDEQ defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L.0202 Groundwater Quality Standards, last amended on April 1, 2013.
- MCL is the Federal Maximum Contaminant Level as found in 40 CFR, Subpart G, §141.62.
- * Concentration listed is a secondary maximum contaminant level (SMCL). SMCLs are established by EPA in the National Secondary Drinking Water Regulations as found in 40 CFR §143.3.
- NE indicates not established. NA indicates not analyzed. Blank cells indicate that there is no information relevant to the respective row.
- Grayed values indicate values that equal or are greater than the SWSL.
- Bold values indicate values that attain or exceed the 15A NCAC 2L Standard.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used to identify results not detected at concentrations which equal the laboratory's MDL. "J" is used to identify estimated concentrations which equal or are greater than the MDL but are less than the laboratory's method reporting limit (MRL).
An italicized J'-flag is a data qualifier, added by HDR to indicate concentrations which equal or are greater than the laboratory's MRL but are less than the SWSL.
- SU indicates Standard Units.
- µI/cm indicates micromhos per centimeter.
- According to the Constituent Look-up webpage on the NCDEQ Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- Analytical results obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on November 23, 2015.

**Table 5 - Analytical Results that Equal or Exceed
15A NCAC 2L Groundwater Quality Standards
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505**

Sample Date: November 4, 2015						
Parameter	Sample ID	Result	Units	15A NCAC 2L Standard	Historical Concentrations	Cause and Significance
Field pH	BC-20	5.3	SU	6.5 - 8.5	5.1 - 5.9	pH in BC-20 is consistent with historical readings at well.
	BC-21	5.1			4.7 - 5.8	pH in BC-21 is consistent with historical readings at well.
	BC-22	5.6			5.3 - 5.9	pH in BC-22 is consistent with historical readings at well.
	BC-23A	5.9			5.4 - 6.1	pH in BC-23A is consistent with historical readings at well.
	BC-25	5.3			5.0 - 5.8	pH in BC-25 is consistent with historical readings at well.
	BC-26	4.8			4.7 - 5.2	pH in BC-26 is consistent with historical readings at well.
	BC-27	5.1			4.8 - 5.7	pH in BC-27 is consistent with historical readings at well.
	BC-28	5.8			5.4 - 6.1	pH in BC-28 is consistent with historical readings at well.
	BC-29	5.1			4.8 - 5.5	pH in BC-29 is consistent with historical readings at well.
	BC-30	5.5			5.3 - 5.9	pH in BC-30 is consistent with historical readings at well.
	BC-31	6.1			5.5 - 6.6	pH in BC-31 is consistent with historical readings at well.
	BC-32	5.4			5.3 - 5.5	pH in BC-32 is consistent with historical readings at well. This is the sixth sampling event at BC-32.
	SW-1	6.3			5.9 - 7.2	pH at SW-1 is consistent with historical readings.
	Iron	BC-20			725	µg/L
BC-23A		445	157 - 8,733	Iron concentration in BC-23A is consistent with historical readings at well. Turbidity measured at 14.3 NTU.		
BC-25		1,250	374 - 288,000	Iron concentration in BC-25 is consistent with historical readings at well. Turbidity measured at 18.7 NTU.		
BC-26		313	183 - 6,050	Iron concentration in BC-26 is consistent with historical readings at well.		
BC-27		3,170	2,400 - 32,300	Iron concentration in BC-27 is consistent with historical readings at well.		
BC-29		328	169 - 20,300	Iron concentration in BC-29 is consistent with historical readings at well.		
BC-30		573	228 - 11,800	Iron concentration in BC-30 is consistent with historical readings at well.		
BC-31		509	152 - 22,300	Iron concentration in BC-31 is consistent with historical readings at well.		
SW-1		1,860	696 - 7,625	Iron concentration at SW-1 is consistent with historical readings. Turbidity measured at 20.1 NTU.		
Manganese	BC-21	89	µg/L	50	4.7 - 240	Manganese concentration in BC-21 is consistent with historical readings at well.
	BC-22	60.4			7.2 - 225	Manganese concentration in BC-22 is consistent with historical readings at well.
	BC-25	99.2			5.6 - 942	Manganese concentration in BC-25 is consistent with historical readings at well. Turbidity measured at 18.7 NTU.
	BC-27	268			113 - 932	Manganese concentration in BC-27 is consistent with historical readings at well.
	SW-1	235			222 - 1,779	Manganese concentration at SW-1 is consistent with historical readings. Turbidity measured at 20.1 NTU.
Selenium	BC-25	21.9	µg/L	20	< 1 - 21.9	Selenium concentration in BC-25 is the highest concentration measured over the period of monitoring. Turbidity measured at 18.7 NTU.
Sulfate	BC-20	492,000	µg/L	250,000	21,950 - 554,000	Sulfate concentration in BC-20 is consistent with historical readings at well.
	BC-21	453,000			11,690 - 701,000	Sulfate concentration in BC-21 is consistent with historical readings at well.
	BC-25	1,150,000			14,320 - 1,190,000	Sulfate concentration in BC-25 is consistent with historical readings at well.
	BC-32	854,000			490,000 - 854,000	Sulfate concentration in BC-32 is the highest concentration measured over the period of monitoring. This is the sixth sampling event at monitoring well BC-32.
Total Dissolved Solids	BC-20	780,000	µg/L	500,000	108,000 - 838,000	TDS concentration in BC-20 is consistent with historical readings at well.
	BC-21	719,000			88,000 - 1,020,000	TDS concentration in BC-21 is consistent with historical readings at well.
	BC-25	1,810,000			74,000 - 1,810,000	TDS concentration in BC-25 is the highest concentration measured over the period of monitoring.
	BC-32	1,270,000			789,000 - 1,270,000	TDS concentration in BC-32 is the highest concentration measured over the period of monitoring. This is the sixth sampling event at monitoring well BC-32.

- Notes:
1. 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L .0202 Groundwater Standards, last amended on April 1, 2013.
 2. µg/L indicates micrograms per liter.
 3. SU indicates Standard Units.
 4. NTU indicates Nephelometric Turbidity Units.
 5. Historical concentrations based on data in Duke Energy Carolinas, LLC analytical results database.

**Table 6 - Leachate Field and Analytical Results
Duke Energy Carolinas LLC/Belews Creek Steam Station
FGD Residue Landfill, Permit No. 8505**

Sample Date: November 4, 2015			Laboratory Certificate Codes:			
Field Sampling performed by Duke Energy Carolinas, LLC			Duke Energy Carolinas Field #5193 Duke Energy Analytical Laboratory #248			
Parameter	SWS ID	Units	Certificate Code	8505 Leachate	MDL	SWSL
Field pH	320	SU	5193	6.4	-	NE
Field Specific Conductance	323	µU/cm	5193	2,799	-	NE
Temperature	325	°C	5193	16.77	-	NE
Arsenic	14	µg/L	248	1.19 J'	0.078	10
Barium	15	µg/L	248	16.4 J'	0.1	100
Boron	428	µg/L	248	6,570	3.3	NE
Cadmium	34	µg/L	248	0.101 U	0.101	1
Chloride	301	µg/L	248	90,400	110	NE
Chromium	51	µg/L	248	0.5 U	0.5	10
Copper	54	µg/L	248	1 U	1	10
Fluoride	312	µg/L	248	2,340 J	85	2,000
Iron	340	µg/L	248	46.7 J'	1.3	300
Lead	131	µg/L	248	0.065 U	0.065	10
Manganese	342	µg/L	248	9,010	0.2	50
Mercury	132	µg/L	248	0.006 U	0.006	0.2
Nickel	152	µg/L	248	10 J'	0.5	50
Nitrate (as Nitrogen)	303	µg/L	248	2,020 J'	5.4	10,000
Selenium	183	µg/L	248	2,160	0.092	10
Silver	184	µg/L	248	0.7 U	0.7	10
Sulfate	315	µg/L	248	1,570,000	1800	250,000
Total Dissolved Solids	311	µg/L	248	120,000	16,700	NE
Zinc	213	µg/L	248	4.82 J	2.6	10

Notes:

- Concentrations presented in micrograms per liter (µg/L).
- SWS ID is the Solid Waste Section Identification Number.
- MDL is the laboratory method detection limit.
- SWSL is the Solid Waste Section Limit. NCDEQ defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- Grayed values indicate values that equal or are greater than the SWSL.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used to identify results not detected at concentrations which equal the laboratory's method detection limit (MDL). "J" is used to identify estimated concentrations which equal or are greater than the MDL but are less than the laboratory's method reporting limit (MRL). An italicized J'-flag is a data qualifier, added by HDR to indicate concentrations which equal or are greater than the laboratory's MRL but are less than the SWSL.
- SU indicates Standard Units.
- µU/cm indicates micromhos per centimeter.
- NE indicates not established.
- According to the Constituent Look-up webpage on the NCDEQ Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- Analytical results obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on November 23, 2015.



A

Appendix A

Field Sampling Forms

FIELD SAMPLING CALIBRATION FORM

STUDY: BELEWS CREEK STEAM STATION - FGD LANDFILL GROUNDWATER MONITORING
DATE (s): November 4, 2015 **SURFACE UNIT READER:** LDC
COLLECTORS: LDC, PSP **SURFACE UNIT SERIAL #:** 3858
ANALYZER MODEL#: MS5 **ANALYZER SERIAL #:** 66121
OTHER EQUIPMENT: TURBIDIMETER NO.2 - 3260-GW **WEATHER CONDITIONS:** Cloudy, slight breeze, 55 to 65 deg F

PROCEDURE #: HYDROLAB 3210.5 **VALIDATED BY:**

LDC 11/5/15

Calibration Date / Time		DATE:	4-Nov-15	TIME:	4:25	DATE:	5-Nov-15	TIME:	500	
		CALIBRATION BP (mmHg)				CALIBRATION BP (mmHg)				
		748.5				748.8				
Parameter	Calibration Standard	Instrument Value		Standard Value	Calibration Results	Instrument Value		Standard Value	Calibration Results	
SPEC. COND. (uS/cm)	SS	0.0	—/—▶	0.0	Instrument Zeroed	0.0	—/—▶	0.0	Zero Pass	
	SS	718.4	—▶	720	Calibration Accepted	719.5	—/—▶	720	Calibration Pass	
	SS	228.0	—/—▶	227	Calibration Accepted	230.4	—/—▶	227	Calibration Pass	
<i>Specific conductance checkpoint (used if sampled well is outside of initial calibration range).</i>										
SPEC. COND. CHECK (uS/cm)	SS		—/—▶				—/—▶			
pH (units)	B (7.00)	7.02	—▶	7.02	Calibration Accepted	7.02	—/—▶	7.02	Calibration Pass	
	B (4.00)	3.98	—▶	4.00	Calibration Accepted	4.01	—/—▶	4.00	Calibration Pass	
	B (10.00)	10.12	—/—▶	10.06	Calibration Accepted	10.07	—/—▶	10.06	Calibration Pass	
		Buffer Temp.		20.36		Buffer Temp.		20.20		
pH Check	B (7.00)		—▶							
Time:				Buffer Temp.						
<input checked="" type="checkbox"/>	SS (7.00)	290	—▶	294	Calibration Accepted	289	—/—▶	295	Calibration Pass	
	SS (4.00)	N/A	—/—▶	469		N/A	—/—▶	470		
		ORP Temp.		20.35		ORP Temp.		20.21		
<input checked="" type="checkbox"/>	DO (mg/L)	W		8.70				8.70		
		W		8.70				8.60		
		AW	8.62	—▶	8.70	Calibration Accepted	8.76	—/—▶	8.65	Calibration Pass
<input checked="" type="checkbox"/>	TURB (ntu)	SS	52.5	—/—▶	53.5	Calibration Accepted	52.5	—/—▶	53.5	Calibration Accepted
Temp Cert Device #										
TEMP (deg C)	NIST	N/A	—/—▶	N/A	Adjustment Not Available	N/A	—/—▶	N/A	Adjustment Not Available	

INSTRUMENT MAINTENANCE		DATE / TIME	
Conductance Subsystem		pH Subsystem	
<input type="checkbox"/>	Cleaned Electrodes	<input type="checkbox"/>	Cleaned Electrodes
<input type="checkbox"/>	Tested - OK	<input type="checkbox"/>	Replaced ref Electrode KCL
<input type="checkbox"/>	See Notes	<input type="checkbox"/>	Replaced Ref. Electrode Tip
		<input type="checkbox"/>	Tested - OK
		<input type="checkbox"/>	See Notes
Oxidation Reduction Subsystem		Temperature Subsystem	
<input type="checkbox"/>	Cleaned Electrode	<input type="checkbox"/>	Cleaned Electrode
<input type="checkbox"/>	Tested - OK	<input type="checkbox"/>	Tested - OK
	See Notes	<input type="checkbox"/>	See Notes
Dissolved Oxygen Subsystem			
<input type="checkbox"/>	Replaced Teflon Membrane	<input type="checkbox"/>	Cleaned Electrode
<input type="checkbox"/>	Replaced DO electrolyte	<input type="checkbox"/>	See Notes

Field Barometric Pressure			
Beginning BP	750.1	(mmHg)	Ending BP 750.1 (mmHg)

KEY: B = Buffer W = Winkler —▶ = Adjusted To N/A = Not Applicable
 SS = Standard solution AW = Average Winkler —/—▶ = Not Adjusted To

NOTES:

FIELD SAMPLING CALIBRATION FORM

STUDY: BELEWS CREEK STEAM STATION - FGD LANDFILL GROUNDWATER MONITORING
DATE (s): November 4, 2015 **SURFACE UNIT READER:** PSP
COLLECTORS: LDC, PSP **SURFACE UNIT SERIAL #:** S05042
ANALYZER MODEL#: MS5 **ANALYZER SERIAL #:** 66120
OTHER EQUIPMENT: TURBIDIMETER NO.1 - 3260-GW **WEATHER CONDITIONS:** Cloudy, slight breeze, 55 to 65 deg F

PROCEDURE #: HYDROLAB 3210.5 **VALIDATED BY:**

WOC 11/5/15

Calibration Date / Time		DATE:	4-Nov-15	TIME:	4:10	Calibration Date / Time		DATE:	5-Nov-15	TIME:	530
		CALIBRATION BP (mmHg)						CALIBRATION BP (mmHg)			
		748.5						748.8			
Parameter	Calibration Standard	Instrument Value		Standard Value	Calibration Results	Instrument Value		Standard Value	Calibration Results		
SPEC. COND. (uS/cm)	SS	0.0	—/—>	0.0	Instrument Zeroed	0.0	—/—>	0.0	Zero Pass		
	SS	719.7	—>	720	Calibration Accepted	719.8	—/—>	720	Calibration Pass		
	SS	227.1	—/—>	227	Calibration Accepted	230.8	—/—>	227	Calibration Pass		
<i>Specific conductance checkpoint (used if sampled well is outside of initial calibration range).</i>											
SPEC. COND. CHECK (uS/cm)	SS		—/—>				—/—>				
pH (units)	B (7.00)	7.02	—>	7.02	Calibration Accepted	7.00	—/—>	7.02	Calibration Pass		
	B (4.00)	4.00	—>	4.00	Calibration Accepted	4.01	—/—>	4.00	Calibration Pass		
	B (10.00)	10.08	—/—>	10.06	Calibration Accepted	10.04	—/—>	10.06	Calibration Pass		
		Buffer Temp.		20.32		Buffer Temp.		20.17			
pH Check	B (7.00)		—>								
Time:											
<input checked="" type="checkbox"/>	SS (7.00)	290	—>	294	Calibration Accepted	291	—/—>	295	Calibration Pass		
	SS (4.00)	N/A	—/—>	470		N/A	—/—>	470			
		ORP Temp.		20.30		ORP Temp.		20.19			
<input checked="" type="checkbox"/>	DO (mg/L)	W		8.70				8.70			
		W		8.70				8.60			
		AW	8.55	—>	8.70	Calibration Accepted	8.83	—/—>	8.65	Calibration Pass	
<input checked="" type="checkbox"/>	TURB (ntu)	SS	53.2	—/—>	54.5	Calibration Accepted	54.1	—/—>	54.5	Calibration Accepted	
Temp Cert Device #											
TEMP (deg C)	NIST	N/A	—/—>	N/A	Adjustment Not Available	N/A	—/—>	N/A	Adjustment Not Available		

INSTRUMENT MAINTENANCE	DATE / TIME
Conductance Subsystem	pH Subsystem
<input type="checkbox"/> Cleaned Electrodes <input type="checkbox"/> Tested - OK <input type="checkbox"/> See Notes	<input type="checkbox"/> Cleaned Electrodes <input type="checkbox"/> Replaced ref Electrode KCL <input type="checkbox"/> Replaced Ref. Electrode Tip <input type="checkbox"/> Tested - OK <input type="checkbox"/> See Notes
Oxidation Reduction Subsystem	Temperature Subsystem
<input type="checkbox"/> Cleaned Electrode <input type="checkbox"/> Tested - OK <input type="checkbox"/> See Notes	<input type="checkbox"/> Cleaned Electrode <input type="checkbox"/> Tested - OK <input type="checkbox"/> See Notes
Dissolved Oxygen Subsystem	
<input type="checkbox"/> Replaced Teflon Membrane <input type="checkbox"/> Replaced DO electrolyte	<input type="checkbox"/> Cleaned Electrode <input type="checkbox"/> See Notes

Field Barometric Pressure			
Beginning BP	750.1	(mmHg)	
Ending BP	750.1	(mmHg)	

KEY: B = Buffer W = Winkler —> = Adjusted To N/A = Not Applicable
 SS = Standard solution AW = Average Winkler —/—> = Not Adjusted To

NOTES:



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LEVEL ONLY

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-7		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	777.80	MIDDLE OF WETTED SCREEN (ft toc)	45.45
WELL DEPTH (ft TOC)	52.30	GS ELEV (ft msl)	775.78	PUMP INTAKE DEPTH (ft TOC)	N/A
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	37.30 TO 52.30

EQUIPMENT INFORMATION							
LEVEL METER SERIAL#	28651	SAMPLING EQUIPMENT	LEVEL ONLY	PURGE METHOD			
WATER LEVEL ONLY		TUBING DIAMETER (in)		Level Only			
		PUMP CONTROLLER SETTINGS					
		PRESSURE	N/A (psi)	RECHARGE	N/A (sec)	DISCHARGE	N/A (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	38.59	WATER COLUMN (ft)	13.71	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	739.21	WELL VOLUME (gal)	2.24		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE					

PURGE VOLUME	WATER LEVEL AFTER PURGE *	COMPLETE EVACUATION	<input checked="" type="checkbox"/> TEMP	<input checked="" type="checkbox"/> SPECIFIC COND.	<input checked="" type="checkbox"/> pH	<input checked="" type="checkbox"/> TURBIDITY	<input type="checkbox"/> ORP	<input type="checkbox"/> DISSOLVED OXYGEN	<input type="checkbox"/> WELL VOL
(gal)	(ft)	(YES/NO)	(deg C)	(umho/cm)	(SU)	(NTU)	(mV-NHE)	(mg/L)	(recalculates on current water level)
2.24		N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A									
TOTAL PURGE VOLUME	* Optional measurement to recalculate well volume when purging results in substantial drawdown of water column			SAMPLE COLLECTED BY		DATE	TIME	CHLORINE (mg/l)	
0.00				PSP		11/4/2015	@	N/A	

QC By: wc 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-20		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	757.22	MIDDLE OF WETTED SCREEN (ft toc)	19.22
WELL DEPTH (ft TOC)	24.22	GS ELEV (ft msl)	754.58	PUMP INTAKE DEPTH (ft TOC)	23.22
SCREEN LENGTH (ft)	10.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	14.22 TO 24.22

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	12 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	11.63	WATER COLUMN (ft)	12.59	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	745.59	WELL VOLUME (gal)	2.05		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
10:45	12.69	210		18.52		939		5.32		6.7		410		8.33		N/A
10:50	12.69	210		18.51		927		5.33		28.9		413		8.32		N/A
10:55	12.69	210		18.58		934		5.33		33.8		416		8.24		N/A
DRAW-DOWN		1.06		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE
INITIAL PURGE VOLUME		0.75		(gal)	SAMPLE COLLECTED BY		DATE		TIME							(mg/l)
TOTAL PURGE VOLUME		1.35		(gal)	LDC		11/4/2015		@ 1100							NA

QC By: WJC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-21		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	756.69	MIDDLE OF WETTED SCREEN (ft toc)	14.00
WELL DEPTH (ft TOC)	16.77	GS ELEV (ft msl)	753.42	PUMP INTAKE DEPTH (ft TOC)	16.27
SCREEN LENGTH (ft)	10.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	6.77 TO 16.77

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	10 (psi)	RECHARGE	10 (sec)	DISCHARGE	7 (sec)

Target 210 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	11.22	WATER COLUMN (ft)	5.55	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	745.47	WELL VOLUME (gal)	0.91		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
12:20	11.48	210		18.39		962		5.11		1.7		433		7.59		N/A
12:25	11.48	210		18.33		942		5.11		1.7		437		7.57		N/A
12:30	11.48	210		18.30		921		5.11		1.8		439		7.49		N/A
DRAW-DOWN		0.26		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE
INITIAL PURGE VOLUME		0.25		(gal)	SAMPLE COLLECTED BY			DATE		TIME		(mg/l)				
TOTAL PURGE VOLUME		0.85		(gal)	LDC			11/4/2015		@	1235		NA			

QC By: LDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES		
PROTECTIVE CASING	Good Condition				
WELL PAD	Good Condition				
WELL CASING	Good Condition				
WELL TAG	Good Tag				

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR CONVENTIONAL SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-22		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	765.91	MIDDLE OF WETTED SCREEN (ft toc)	8.22
WELL DEPTH (ft TOC)	13.00	GS ELEV (ft msl)	763.72	PUMP INTAKE DEPTH (ft TOC)	11.50
SCREEN LENGTH (ft)	10.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	3.00 TO 13.00

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Conventional	
PUMP CONTROLLER SETTINGS					
PRESSURE	8 (psi)	RECHARGE	5 (sec)	DISCHARGE	10 (sec)

Target 500 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	3.43	WATER COLUMN (ft)	9.57	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	762.48	WELL VOLUME (gal)	1.56		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

PURGE VOLUME	WATER LEVEL AFTER PURGE *	COMPLETE EVACUATION	<input checked="" type="checkbox"/> TEMP	<input checked="" type="checkbox"/> SPECIFIC COND.	<input checked="" type="checkbox"/> pH	<input checked="" type="checkbox"/> TURBIDITY	<input type="checkbox"/> ORP	<input type="checkbox"/> DISSOLVED OXYGEN	<input type="checkbox"/> WELL VOL (gal)
(gal)	(ft)	(YES/NO)	(deg C)	(umho/cm)	(SU)	(NTU)	(mV-NHE)	(mg/L)	(recalculates on current water level)
1.56									
1.75		NO	16.75	135	5.59	8.8	401	5.09	
1.75		NO	16.77	127	5.61	4.3	405	5.40	
1.75		NO	16.78	125	5.59	3.5	408	5.48	
1.75		NO	16.78	125	5.59	2.8	409	5.51	
TOTAL PURGE VOLUME	* Optional measurement to recalculate well volume when purging results in substantial drawdown of water column		COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED						CHLORINE (mg/l)
7.00			SAMPLE COLLECTED BY		DATE		TIME		
			LDC		11/4/2015 @		1155		N/A

QC By: WC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR CONVENTIONAL SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015	WELL/LOCATION NAME	BC-23A		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	863.79	MIDDLE OF WETTED SCREEN (ft toc)	90.77
WELL DEPTH (ft TOC)	101.21	GS ELEV (ft msl)	862.56	PUMP INTAKE DEPTH (ft TOC)	98.71
SCREEN LENGTH (ft)	25.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	76.21 TO 101.21

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Conventional	
PUMP CONTROLLER SETTINGS					
PRESSURE	60 (psi)	RECHARGE	15 (sec)	DISCHARGE	6 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	80.32	WATER COLUMN (ft)	20.89	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	783.47	WELL VOLUME (gal)	3.41		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

PURGE VOLUME	WATER LEVEL AFTER PURGE *	COMPLETE EVACUATION	<input checked="" type="checkbox"/> TEMP	<input checked="" type="checkbox"/> SPECIFIC COND.	<input checked="" type="checkbox"/> pH	<input type="checkbox"/> TURBIDITY	<input type="checkbox"/> ORP	<input type="checkbox"/> DISSOLVED OXYGEN	<input checked="" type="checkbox"/> WELL VOL	
(gal)	(ft)	(YES/NO)	(deg C)	(umho/cm)	(SU)	(NTU)	(mV-NHE)	(mg/L)	(gal) <small>(recalculates on current water level)</small>	
3.41										
3.50	91.53	NO	15.21	46	5.84	25.8	417	8.16	1.58	
1.75		NO	15.29	46	5.88	23.7	420	8.24		
1.75		NO	15.34	46	5.86	14.3	424	8.18		
TOTAL PURGE VOLUME		* Optional measurement to recalculate well volume when purging results in substantial drawdown of water column		COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED						CHLORINE (mg/l)
7.00				SAMPLE COLLECTED BY		DATE		TIME		
				LDC	11/4/2015	@	0755		N/A	

QC By: WOC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-25		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	748.43	MIDDLE OF WETTED SCREEN (ft toc)	20.13
WELL DEPTH (ft TOC)	26.15	GS ELEV (ft msl)	745.97	PUMP INTAKE DEPTH (ft TOC)	25.65
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	11.15 TO 26.15

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	28651	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	8 (psi)	RECHARGE	10 (sec)	DISCHARGE	5 (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	14.10	WATER COLUMN (ft)	12.05	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	734.33	WELL VOLUME (gal)	1.97		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
13:40	14.43	200		19.14		2100		5.25		16.3		346		5.89		N/A
13:45	14.43	200		19.10		2100		5.24		16.5		346		5.95		N/A
13:50	14.43	200		19.07		2090		5.26		18.7		346		5.93		N/A
DRAW-DOWN		0.33		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED										CHLORINE	
INITIAL PURGE VOLUME		0.75		(gal)	SAMPLE COLLECTED BY			DATE		TIME				(mg/l)		
TOTAL PURGE VOLUME		1.30		(gal)	PSP			11/4/2015		@	1355		NA			

QC By: WDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition		Originally a flush mount well, it was converted to a stick-up well by adding a riser to the well casing during June 2015. The original well depth from TOC was 23.15 ft. June 29, 2015 the dedicated pumps were re-set by adding new tubing. Well depth from TOC was re-measured at 26.15 ft. and updated on this blankform.
WELL PAD	Good Condition		
WELL CASING	Good Condition		
WELL TAG	Good Tag		

SAMPLING NOTES

If well is pumped with no energy discharge (8 to 10 psi) turbidity will decrease below 10 ntu.



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-26		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	749.32	MIDDLE OF WETTED SCREEN (ft toc)	20.43
WELL DEPTH (ft TOC)	23.26	GS ELEV (ft msl)	747.21	PUMP INTAKE DEPTH (ft TOC)	22.26
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	8.26 TO 23.26

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	28651	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	13 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	17.60	WATER COLUMN (ft)	5.66	<i>Well Volume = water column X conversion factor</i> <i>(Conversion factor dependent on well diameter and selected well volume units)</i>	
WATER ELEVATION (ft msl)	731.72	WELL VOLUME (gal)	0.92		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>		
12:20	19.21	270		16.03		152		4.83		42.9		337		4.16		N/A		
12:25	19.21	270		16.02		151		4.84		32.9		340		4.12		N/A		
12:30	19.21	270		16.01		150		4.83		23.8		343		4.06		N/A		
12:35	19.21	270		16.01		150		4.81		22.0		347		3.98		N/A		
12:40	19.21	270		16.00		148		4.83		14.0		350		3.93		N/A		
12:45	19.21	270		16.00		147		4.82		11.1		353		3.86		N/A		
12:50	19.21	270		16.01		147		4.83		9.5		356		3.82		N/A		
DRAW-DOWN		1.61		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE		
INITIAL PURGE VOLUME		3.00		(gal)	SAMPLE COLLECTED BY			DATE		TIME						(mg/l)		
TOTAL PURGE VOLUME		5.15		(gal)	PSP			11/4/2015		@		1255						NA

QC By: WDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES		
PROTECTIVE CASING	Good Condition				
WELL PAD	Good Condition				
WELL CASING	Good Condition				
WELL TAG	Good Tag				

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-27		

MONITORING WELL INFORMATION

WELL DIAMETER (in)	2	TOC ELEV (ft msl)	764.78	MIDDLE OF WETTED SCREEN (ft toc)	36.87
WELL DEPTH (ft TOC)	38.33	GS ELEV (ft msl)	762.44	PUMP INTAKE DEPTH (ft TOC)	37.83
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	23.33 TO 38.33

EQUIPMENT INFORMATION

LEVEL METER SERIAL#	28651	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD		Low Flow
PUMP CONTROLLER SETTINGS					
PRESSURE	17 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

SAMPLING INFORMATION

INITIAL DEPTH TO WATER (ft TOC)	35.40	WATER COLUMN (ft)	2.93	<i>Well Volume = water column X conversion factor</i> <i>(Conversion factor dependent on well diameter and selected well volume units)</i>
WATER ELEVATION (ft msl)	729.38	WELL VOLUME (gal)	0.48	
DETECTED ODOR	None	CONVERSION FACTOR	0.1631	
APPEARANCE	Normal			

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
10:50	35.82	120		16.99		89		5.22		>1000		298		0.73		N/A
10:55	35.82	120		16.91		78		5.15		50.9		262		0.64		N/A
11:00	35.82	120		16.92		77		5.17		28.0		247		0.65		N/A
11:05	35.82	120		16.93		76		5.13		9.7		235		0.71		N/A
11:10	35.82	120		16.89		76		5.12		6.0		229		0.71		N/A
11:15	35.82	120		16.86		75		5.12		3.7		223		0.70		N/A
DRAW-DOWN		0.42		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE
INITIAL PURGE VOLUME		0.25		(gal)	SAMPLE COLLECTED BY			DATE		TIME						(mg/l)
TOTAL PURGE VOLUME		1.05		(gal)	PSP			11/4/2015		@ 1120						NA

QC By:	WOC 11/5/15
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Sample preservation verified to pH (units)	< 2.0
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WELL CONDITION			ADDITIONAL WELL CONDITION NOTES	
PROTECTIVE CASING	Good Condition		Originally a flush mount well, it was converted to a stick-up well by adding a riser to the well casing during June 2015. The original well depth from TOC was 34.95 ft. June 29, 2015 the dedicated pumps were re-set by adding new tubing. Well depth from TOC was re-measured at 38.33 ft. and updated on this blankform.	
WELL PAD	Good Condition			
WELL CASING	Good Condition			
WELL TAG	Good Tag			

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-28		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	818.09	MIDDLE OF WETTED SCREEN (ft toc)	56.22
WELL DEPTH (ft TOC)	60.20	GS ELEV (ft msl)	816.02	PUMP INTAKE DEPTH (ft TOC)	59.20
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	45.20 TO 60.20

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	30 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 150 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	52.24	WATER COLUMN (ft)	7.96	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	765.85	WELL VOLUME (gal)	1.30		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
9:20	53.73	150		15.84		61		5.80		7.8		373		7.12		N/A
9:25	53.73	150		15.74		60		5.79		3.5		379		6.80		N/A
9:30	53.73	150		15.75		60		5.80		2.8		382		6.73		N/A
DRAW-DOWN		1.49		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED										CHLORINE	
INITIAL PURGE VOLUME		0.25		(gal)	SAMPLE COLLECTED BY			DATE		TIME				(mg/l)		
TOTAL PURGE VOLUME		0.65		(gal)	LDC			11/4/2015		@ 0935				NA		

QC By: LDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES		
PROTECTIVE CASING	Good Condition				
WELL PAD	Minor Cracks				
WELL CASING	Good Condition				
WELL TAG	Good Tag				

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-29		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	756.20	MIDDLE OF WETTED SCREEN (ft toc)	22.58
WELL DEPTH (ft TOC)	25.32	GS ELEV (ft msl)	752.28	PUMP INTAKE DEPTH (ft TOC)	SEE NOTE
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	10.32 TO 25.32

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	28651	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	12 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	19.83	WATER COLUMN (ft)	5.49	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	736.37	WELL VOLUME (gal)	0.90		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/> TEMP (deg C)	<input checked="" type="checkbox"/> SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/> pH (SU)	<input checked="" type="checkbox"/> TURBIDITY (NTU)	<input checked="" type="checkbox"/> ORP (mV -NEH)	<input checked="" type="checkbox"/> DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/> WELL VOL (gal) <small>(recalculates on current water level)</small>
9:15	20.07	210	16.29	56	5.12	34.9	454	2.09	N/A
9:20	20.07	210	16.28	55	5.10	19.4	452	2.12	N/A
9:25	20.07	210	16.31	55	5.10	8.2	451	2.18	N/A
DRAW-DOWN		0.24	(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED					CHLORINE
INITIAL PURGE VOLUME		0.75	(gal)	SAMPLE COLLECTED BY		DATE	TIME	(mg/l)	
TOTAL PURGE VOLUME		1.35	(gal)	PSP		11/4/2015	@	0930	NA

QC By: wc wls/lis

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES

Well casing was extended 3.02 feet higher than previous sampling. Pump intake for this event was estimated to be 4.02 feet off the well bottom (originally 1 foot off the bottom plus the additional 3.02 feet since the well casing was extended). The well depth should be remeasured and pump intake should be reset to 1 foot from the well bottom.



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-30		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	775.72	MIDDLE OF WETTED SCREEN (ft toc)	31.69
WELL DEPTH (ft TOC)	34.10	GS ELEV (ft msl)	773.91	PUMP INTAKE DEPTH (ft TOC)	33.60
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	19.10 TO 34.10

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	28651	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	17 (psi)	RECHARGE	13 (sec)	DISCHARGE	7 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	29.27	WATER COLUMN (ft)	4.83	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	746.45	WELL VOLUME (gal)	0.79		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
7:45	30.34	180		14.79		75		5.47		8.0		400		7.47		N/A
7:50	30.34	180		14.81		75		5.48		6.9		401		7.50		N/A
7:55	30.34	180		14.84		75		5.52		8.1		403		7.54		N/A
DRAW-DOWN		1.07		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED										CHLORINE	
INITIAL PURGE VOLUME		1.50		(gal)	SAMPLE COLLECTED BY			DATE		TIME				(mg/l)		
TOTAL PURGE VOLUME		2.00		(gal)	PSP			11/4/2015		@ 0800				NA		

QC By: wc 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES

Well located in middle of field.



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-31		

MONITORING WELL INFORMATION

WELL DIAMETER (in)	2	TOC ELEV (ft msl)	816.40	MIDDLE OF WETTED SCREEN (ft toc)	73.30
WELL DEPTH (ft TOC)	83.30	GS ELEV (ft msl)	813.43	PUMP INTAKE DEPTH (ft TOC)	82.00
SCREEN LENGTH (ft)	20.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	63.30 TO 83.30

EQUIPMENT INFORMATION

LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD		Low Flow
Target 140 mL/min.					
PUMP CONTROLLER SETTINGS					
PRESSURE	30 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

SAMPLING INFORMATION

INITIAL DEPTH TO WATER (ft TOC)	61.26	WATER COLUMN (ft)	22.04	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)
WATER ELEVATION (ft msl)	755.14	WELL VOLUME (gal)	3.59	
DETECTED ODOR	None	CONVERSION FACTOR	0.1631	
APPEARANCE	Normal			

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>	
8:20	64.16	130		16.10		121		5.98		4.7		315		3.73		N/A	
8:25	64.16	130		15.93		124		6.09		4.5		266		3.27		N/A	
8:30	64.16	130		15.88		112		6.08		3.6		285		3.84		N/A	
8:35	64.16	130		15.89		110		6.07		2.5		302		4.08		N/A	
8:40	64.16	130		15.98		108		6.08		2.6		314		4.81		N/A	
8:45	64.16	130		16.04		107		6.08		2.8		320		4.93		N/A	
8:50	64.16	130		16.03		106		6.08		7.1		325		5.07		N/A	
DRAW-DOWN		2.90		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED												
INITIAL PURGE VOLUME		0.25		(gal)	SAMPLE COLLECTED BY		DATE		TIME							CHLORINE (mg/l)	
TOTAL PURGE VOLUME		1.30		(gal)	LDC		11/4/2015		@	0855							NA

QC By: LDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-32		

MONITORING WELL INFORMATION

WELL DIAMETER (in)	2	TOC ELEV (ft msl)	756.56	MIDDLE OF WETTED SCREEN (ft toc)	25.51
WELL DEPTH (ft TOC)	33.01	GS ELEV (ft msl)	753.62	PUMP INTAKE DEPTH (ft TOC)	32.01
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	18.01 TO 33.01

EQUIPMENT INFORMATION

LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD		Low Flow
PUMP CONTROLLER SETTINGS					
PRESSURE	15 (psi)	RECHARGE	7 (sec)	DISCHARGE	8 (sec)

Target 240 mL/min.

SAMPLING INFORMATION

INITIAL DEPTH TO WATER (ft TOC)	15.37	WATER COLUMN (ft)	17.64	<i>Well Volume = water column X conversion factor</i> <i>(Conversion factor dependent on well diameter and selected well volume units)</i>
WATER ELEVATION (ft msl)	741.19	WELL VOLUME (gal)	2.88	
DETECTED ODOR	None	CONVERSION FACTOR	0.1631	
APPEARANCE	Normal			

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>		
10:05	17.02	260		16.75		1523		5.41		2.3		403		6.34		N/A		
10:10	17.02	260		16.81		1507		5.43		2.1		401		6.38		N/A		
10:15	17.02	260		16.83		1484		5.43		2.0		402		6.28		N/A		
DRAW-DOWN		1.65		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE		
INITIAL PURGE VOLUME		0.50		(gal)	SAMPLE COLLECTED BY			DATE		TIME							(mg/l)	
TOTAL PURGE VOLUME		1.20		(gal)	LDC			11/4/2015		@	1020							NA

QC By: LDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR NO PURGE SAMPLING

PROCEDURE NO	3175.2
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-SW1		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)		TOC ELEV (ft msl)	N/A	MIDDLE OF WETTED SCREEN (ft toc)	
WELL DEPTH (ft TOC)		GS ELEV (ft msl)		PUMP INTAKE DEPTH (ft TOC)	
SCREEN LENGTH (ft)		ELEV REF	NAVD 88	SCREEN INTERVAL (ft TOC)	0.00 TO 0.00

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	N/A	SAMPLING EQUIPMENT	GRAB	PURGE METHOD	
Surface Water Location		TUBING DIAMETER (in)		No Purge	
		PUMP CONTROLLER SETTINGS			
PRESSURE	N/A (psi)	RECHARGE	N/A (sec)	DISCHARGE	N/A (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	N/A	WATER COLUMN (ft)		<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)		WELL VOLUME (gal)			
DETECTED ODOR		CONVERSION FACTOR			
APPEARANCE	Normal				

HYDRASLEEVE LENGTH (inches)	DEPLOYED DEPTH (top) (ft TOC)	DATE DEPLOYED	<input type="checkbox"/> TEMP (deg C)	<input type="checkbox"/> SPECIFIC COND. (umho/cm)	<input type="checkbox"/> pH (SU)	<input type="checkbox"/> TURBIDITY (NTU)	<input type="checkbox"/> ORP (mV-NHE)	<input type="checkbox"/> DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>
N/A	N/A	N/A	15.84	344	6.34	20.1	272	7.99	N/A

Deployed Top Weight		Water Column In Screen Above Top Of Hydrasleeve		NO PURGE SAMPLE			CHLORINE (mg/l)
		(ft) = (in)		SAMPLE COLLECTED BY	DATE	TIME	
				PSP	11/4/2015	@ 1430	N/A

QC By: WLC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	
WELL PAD	
WELL CASING	
WELL TAG	

SAMPLING NOTES



DUKE ENERGY

GROUNDWATER MONITORING DATA SHEET FOR NO PURGE SAMPLING

PROCEDURE NO	3175.2
--------------	--------

SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-Nov-2015 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	BC-LEACHATE		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)		TOC ELEV (ft msl)	N/A	MIDDLE OF WETTED SCREEN (ft toc)	
WELL DEPTH (ft TOC)		GS ELEV (ft msl)		PUMP INTAKE DEPTH (ft TOC)	
SCREEN LENGTH (ft)		ELEV REF	NAVD 88	SCREEN INTERVAL (ft TOC)	0.00 TO 0.00

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	N/A	SAMPLING EQUIPMENT	PERISTALTIC PUMP	PURGE METHOD	
		TUBING DIAMETER (in)	3/8 OD	No Purge	
PUMP CONTROLLER SETTINGS					
PRESSURE	N/A (psi)	RECHARGE	N/A (sec)	DISCHARGE	N/A (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	N/A	WATER COLUMN (ft)		<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)		WELL VOLUME (gal)			
DETECTED ODOR		CONVERSION FACTOR			
APPEARANCE	Normal				

HYDRASLEEVE LENGTH (inches)	DEPLOYED DEPTH (top) (ft TOC)	DATE DEPLOYED	<input checked="" type="checkbox"/> TEMP (deg C)	<input checked="" type="checkbox"/> SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/> pH (SU)	<input checked="" type="checkbox"/> TURBIDITY (NTU)	<input checked="" type="checkbox"/> ORP (mV-NHE)	<input checked="" type="checkbox"/> DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>
N/A	N/A	N/A	16.77	2799	6.43	1.1	366	6.33	N/A

Deployed Top Weight		Water Column In Screen Above Top Of Hydrasleeve	NO PURGE SAMPLE				CHLORINE (mg/l)
		(ft) = (in)	SAMPLE COLLECTED BY	DATE	TIME		
			PSP	11/4/2015	@ 1020	N/A	

QC By: WDC 11/5/15

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	
WELL PAD	
WELL CASING	
WELL TAG	

SAMPLING NOTES

NORTH CAROLINA GROUNDWATER SAMPLING SITE CHECKLIST

LOCATION / SITE
SITE CONTACT
WEATHER
PAGE 1 OF 1

BELEWS CREEK STEAM STATION - FGD LANDFILL GROUNDWATER MONITORING
 Melonie Martin, Kim Hutchinson
 Cloudy, slight breeze, 55 to 65 deg F.

PERMIT #

85-05

SAMPLE DATE
FIELD CREW

November 4, 2015
 LDC, PSP

	BC-7	BC-20	BC-21	BC-22	BC-23A	BC-25	BC-26	BC-27	BC-28	BC-29	BC-30	BC-31	BC-32	BC-SW1	
ACCESS TO WELLS															
Access cleared into well	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Access cleared around well	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Tall grass or weeds - needs mowing															
Road washing out / muddy / needs grading															
Fallen tree blocking access															
WELL SECURITY															
Well found locked	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Well found unlocked															
WELL LOCK CONDITION															
Lock in good condition	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Lock rusted, difficult to open / needs replacing															
Replaced damaged lock															
WELL CASINGS															
Casing in good condition	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Damaged casing / still functional															
Damaged casing / repair required															
CONCRETE PADS															
Pad in good condition	YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES	YES	YES	N/A
Minor cracks									SEE NOTE						
Major cracks / broken / repair required															
Undermined / washing out															
Fire ants around concrete pad															
WELL PROTECTIVE CASINGS															
Casing in good condition	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Damaged casing / still functional															
Damaged casing / repair required															
Broken hinge on protective lid															
Wasp nest inside protective casing															
Ants inside protective casing															
WELL CAPS															
Well cap in good conditon	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Damaged / needs replacement															
Replaced damaged well cap															
FLUSH MOUNT WELLS															
Vault in good condition	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water inside vault															
Vault bolt holes broken or stripped															
Bolts stripped															
Vault lid cracked or broken															
WELL ID TAGS															
Well tag in good condition	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Well tag missing															
Well tag damaged / illegible															
Lacks required information - Driller Reg #															
Lacks required information - Completion date															
Lacks required information - Total well depth															
Lacks required information - Depth to screen															
Lacks required information - Non potable tag															

NOTE: BC-28 has a minor crack in the well pad.

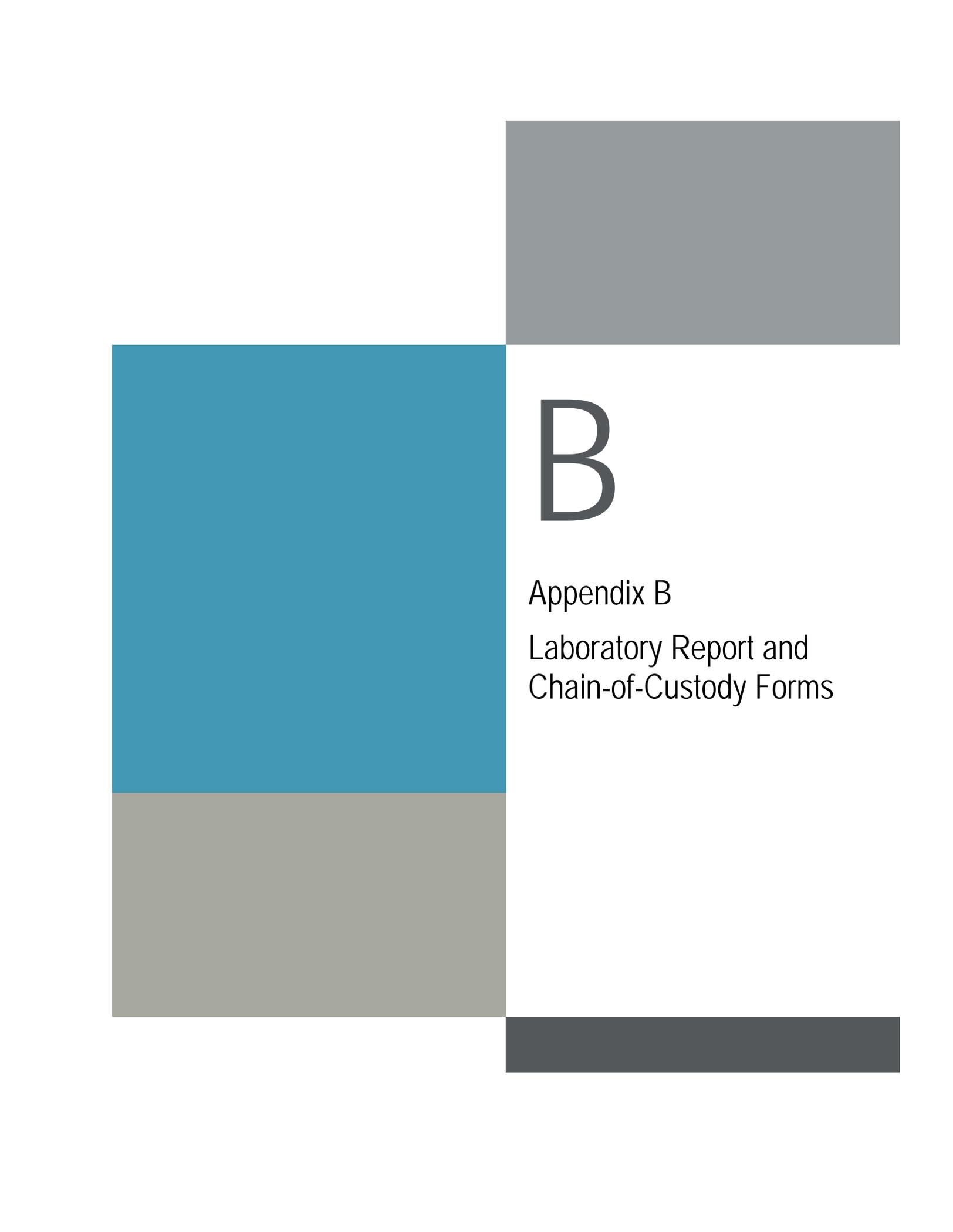
**BELEWS CREEK STEAM STATION
FGD LANDFILL GROUNDWATER
GROUNDWATER MONITORING FIELD DATA
PERMIT # 85-05**

DATE	WELL NO.	WELL DEPTH (feet-toc)	DEPTH TO WATER (feet-toc)	WATER ELEV. (feet)	APPEARANCE	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)
11/4/2015	BC-7	52.30	38.59	739.21	N/A	N/A	LO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/4/2015	BC-20	24.22	11.63	745.59	Normal	None	LF	210	2.05	1.35	N/A	18.58	934	5.3	33.8	416	8.24
11/4/2015	BC-21	16.77	11.22	745.47	Normal	None	LF	210	0.91	0.85	N/A	18.30	921	5.1	1.8	439	7.49
11/4/2015	BC-22	13.00	3.43	762.48	Normal	None	C	N/A	1.56	7.00	NO	16.78	125	5.6	2.8	409	5.51
11/4/2015	BC-23A	101.21	80.32	783.47	Normal	None	C	N/A	3.41	7.00	NO	15.34	46	5.9	14.3	424	8.18
11/4/2015	BC-25	26.15	14.10	734.33	Normal	None	LF	200	1.97	1.30	N/A	19.07	2090	5.3	18.7	346	5.93
11/4/2015	BC-26	23.26	17.60	731.72	Normal	None	LF	270	0.92	5.15	N/A	16.01	147	4.8	9.5	356	3.82
11/4/2015	BC-27	38.33	35.40	729.38	Normal	None	LF	120	0.48	1.05	N/A	16.86	75	5.1	3.7	223	0.70
11/4/2015	BC-28	60.20	52.24	765.85	Normal	None	LF	150	1.30	0.65	N/A	15.75	60	5.8	2.8	382	6.73
11/4/2015	BC-29	25.32	19.83	736.37	Normal	None	LF	210	0.90	1.35	N/A	16.31	55	5.1	8.2	451	2.18
11/4/2015	BC-30	34.10	29.27	746.45	Normal	None	LF	180	0.79	2.00	N/A	14.84	75	5.5	8.1	403	7.54
11/4/2015	BC-31	83.30	61.26	755.14	Normal	None	LF	130	3.59	1.30	N/A	16.03	106	6.1	7.1	325	5.07
11/4/2015	BC-32	33.01	15.37	741.19	Normal	None	LF	260	2.88	1.20	N/A	16.83	1484	5.4	2.0	402	6.28
11/4/2015	BC-SW1	0.00	N/A	N/A	Normal	None	NP	N/A	N/A	N/A	N/A	15.84	344	6.3	20.1	272	7.99
11/4/2015	BC-LEACHATE	0.00	N/A	N/A	Normal	None	NP	N/A	N/A	N/A	N/A	16.77	2799	6.4	1.1	366	6.33

Purge Methods

LF = Low Flow
 LF(M) = Low Flow (Mod.)
 C = Conventional
 NP = No Purge
 EOP = Equip. Only Purge
 LO = Level Only

* = Applicable to LF & LF(M) Purging Only



B

Appendix B

Laboratory Report and
Chain-of-Custody Forms



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: J15100577

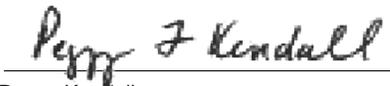
Project Name: BELEWS - GW FGD LF

Customer Name(s): Chuck Campbell, T. Hunsucker, Ed Sullivan

Customer Address: 3195 Pine Hall Rd
Mailcode: Belews Steam Station
Belews Creek, NC 28012

Lab Contact: Peggy Kendall Phone:

Report Authorized By:
(Signature)


Peggy Kendall

Date: 11/19/2015

Program Comments:

Please contact the Program Manager (Peggy Kendall) 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
2015034575	BELEWS	04-Nov-15 11:00 AM	LDC	BC-20
2015034576	BELEWS	04-Nov-15 12:35 PM	LDC	BC-21
2015034577	BELEWS	04-Nov-15 11:55 AM	LDC	BC-22
2015034578	BELEWS	04-Nov-15 7:55 AM	LDC	BC-23A
2015034579	BELEWS	04-Nov-15 1:55 PM	PSP	BC-25
2015034580	BELEWS	04-Nov-15 12:55 PM	PSP	BC-26
2015034581	BELEWS	04-Nov-15 11:20 AM	PSP	BC-27
2015034582	BELEWS	04-Nov-15 9:35 AM	LDC	BC-28
2015034583	BELEWS	04-Nov-15 9:30 AM	PSP	BC-29
2015034584	BELEWS	04-Nov-15 8:00 AM	PSP	BC-30
2015034585	BELEWS	04-Nov-15 8:55 AM	LDC	BC-31
2015034586	BELEWS	04-Nov-15 10:20 AM	LDC	BC-32
2015034587	BELEWS	04-Nov-15 2:30 PM	PSP	SW-1
2015034588	BELEWS	04-Nov-15 10:20 AM	PSP	LEACHATE
2015034589	BELEWS	04-Nov-15 2:50 PM	PSP	FIELD BLANK
15 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:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Job Summary Report | <input type="checkbox"/> Sub-contracted Laboratory Results |
| <input checked="" type="checkbox"/> Sample Identification | <input type="checkbox"/> Customer Specific Data Sheets, Reports, & Documentation |
| <input checked="" type="checkbox"/> Technical Validation of Data Package | <input type="checkbox"/> Customer Database Entries |
| <input checked="" type="checkbox"/> Analytical Laboratory Certificate of Analysis | <input checked="" type="checkbox"/> Chain of Custody |
| <input type="checkbox"/> Analytical Laboratory QC Report | <input checked="" type="checkbox"/> Electronic Data Deliverable (EDD) Sent Separatel |

Reviewed By: DBA Account

Date: 11/19/2015

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J15100577

Site: BC-20

Collection Date: 04-Nov-15 11:00 AM

Sample #: 2015034575

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	5.6	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	3.3	mg/L		0.5	5	EPA 300.0	11/05/2015 14:32	BGN9034
Fluoride	< 0.5	mg/L		0.5	5	EPA 300.0	11/05/2015 14:32	BGN9034
Nitrate	9.3	mg/L		0.5	5	EPA 300.0	11/05/2015 14:32	BGN9034
Nitrate as N	2.1	mg-N/L		0.023	1	EPA 300.0	11/05/2015 14:32	BGN9034
Sulfate	490	mg/L		10	100	EPA 300.0	11/05/2015 14:32	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 16:54	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.054	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 09:23	MHH7131
Calcium (Ca)	112	mg/L	M4	0.1	10	EPA 200.7	11/06/2015 09:23	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Iron (Fe)	0.725	mg/L		0.01	1	EPA 200.7	11/06/2015 09:23	MHH7131
Magnesium (Mg)	45.4	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Manganese (Mn)	0.020	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Nickel (Ni)	0.016	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Potassium (K)	6.11	mg/L		0.1	1	EPA 200.7	11/06/2015 09:23	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
Sodium (Na)	23.7	mg/L		0.05	1	EPA 200.7	11/06/2015 09:23	MHH7131
Zinc (Zn)	0.019	mg/L		0.005	1	EPA 200.7	11/06/2015 09:23	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:35	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:35	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:35	MHALL3
Selenium (Se)	2.24	ug/L		1	1	EPA 200.8	11/05/2015 18:35	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	780	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J15100577

Site: BC-21

Collection Date: 04-Nov-15 12:35 PM

Sample #: 2015034576

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	< 5	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	5.5	mg/L		0.5	5	EPA 300.0	11/05/2015 14:50	BGN9034
Fluoride	< 0.5	mg/L		0.5	5	EPA 300.0	11/05/2015 14:50	BGN9034
Nitrate	15	mg/L		0.5	5	EPA 300.0	11/05/2015 14:50	BGN9034
Nitrate as N	3.3	mg-N/L		0.023	1	EPA 300.0	11/05/2015 14:50	BGN9034
Sulfate	450	mg/L		10	100	EPA 300.0	11/05/2015 14:50	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 16:57	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.020	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 09:35	MHH7131
Calcium (Ca)	63.1	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 09:35	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Iron (Fe)	0.012	mg/L		0.01	1	EPA 200.7	11/06/2015 09:35	MHH7131
Magnesium (Mg)	70.0	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Manganese (Mn)	0.089	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Potassium (K)	3.93	mg/L		0.1	1	EPA 200.7	11/06/2015 09:35	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
Sodium (Na)	23.8	mg/L		0.05	1	EPA 200.7	11/06/2015 09:35	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:35	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	1.64	ug/L		1	1	EPA 200.8	11/05/2015 18:14	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:14	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:14	MHALL3
Selenium (Se)	1.77	ug/L		1	1	EPA 200.8	11/05/2015 18:14	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	720	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J15100577

Site: BC-22

Collection Date: 04-Nov-15 11:55 AM

Sample #: 2015034577

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	18	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	4.3	mg/L		0.1	1	EPA 300.0	11/05/2015 13:57	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 13:57	BGN9034
Nitrate	5.0	mg/L		0.1	1	EPA 300.0	11/05/2015 13:57	BGN9034
Nitrate as N	1.1	mg-N/L		0.023	1	EPA 300.0	11/05/2015 13:57	BGN9034
Sulfate	25	mg/L		0.5	5	EPA 300.0	11/05/2015 13:57	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 16:59	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.086	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 09:39	MHH7131
Calcium (Ca)	9.06	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 09:39	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Iron (Fe)	0.203	mg/L		0.01	1	EPA 200.7	11/06/2015 09:39	MHH7131
Magnesium (Mg)	3.46	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Manganese (Mn)	0.060	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Potassium (K)	2.10	mg/L		0.1	1	EPA 200.7	11/06/2015 09:39	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
Sodium (Na)	7.44	mg/L		0.05	1	EPA 200.7	11/06/2015 09:39	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:39	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:42	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:42	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:42	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:42	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	100	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-23A

Collection Date: 04-Nov-15 7:55 AM

Sample #: 2015034578

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	17	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	2.3	mg/L		0.1	1	EPA 300.0	11/05/2015 10:23	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 10:23	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 10:23	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 300.0	11/05/2015 10:23	BGN9034
Sulfate	0.23	mg/L		0.1	1	EPA 300.0	11/05/2015 10:23	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:01	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.035	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 09:44	MHH7131
Calcium (Ca)	1.54	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 09:44	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Iron (Fe)	0.445	mg/L		0.01	1	EPA 200.7	11/06/2015 09:44	MHH7131
Magnesium (Mg)	0.850	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Manganese (Mn)	0.008	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Potassium (K)	1.56	mg/L		0.1	1	EPA 200.7	11/06/2015 09:44	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
Sodium (Na)	5.96	mg/L		0.05	1	EPA 200.7	11/06/2015 09:44	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:44	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:49	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:49	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:49	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:49	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	64	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-25

Collection Date: 04-Nov-15 1:55 PM

Sample #: 2015034579

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	13	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	48	mg/L		1	10	EPA 300.0	11/05/2015 15:08	BGN9034
Fluoride	< 1	mg/L		1	10	EPA 300.0	11/05/2015 15:08	BGN9034
Nitrate	7.7	mg/L		1	10	EPA 300.0	11/05/2015 15:08	BGN9034
Nitrate as N	1.7	mg-N/L		0.023	1	EPA 300.0	11/05/2015 15:08	BGN9034
Sulfate	1100	mg/L		20	200	EPA 300.0	11/05/2015 15:08	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:04	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.070	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 09:48	MHH7131
Calcium (Ca)	269	mg/L	B2	0.1	10	EPA 200.7	11/06/2015 09:48	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
Iron (Fe)	1.25	mg/L		0.01	1	EPA 200.7	11/06/2015 09:48	MHH7131
Magnesium (Mg)	137	mg/L		0.05	10	EPA 200.7	11/06/2015 09:48	MHH7131
Manganese (Mn)	0.099	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
Nickel (Ni)	0.047	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
Potassium (K)	10.3	mg/L		0.1	1	EPA 200.7	11/06/2015 09:48	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
Sodium (Na)	38.0	mg/L		0.05	1	EPA 200.7	11/06/2015 09:48	MHH7131
Zinc (Zn)	0.014	mg/L		0.005	1	EPA 200.7	11/06/2015 09:48	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:56	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:56	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 18:56	MHALL3
Selenium (Se)	21.9	ug/L		1	1	EPA 200.8	11/05/2015 18:56	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	1800	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-26

Collection Date: 04-Nov-15 12:55 PM

Sample #: 2015034580

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	< 5	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	15	mg/L		0.5	5	EPA 300.0	11/05/2015 14:15	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 14:15	BGN9034
Nitrate	24	mg/L		0.5	5	EPA 300.0	11/05/2015 14:15	BGN9034
Nitrate as N	5.4	mg-N/L		0.023	1	EPA 300.0	11/05/2015 14:15	BGN9034
Sulfate	13	mg/L		0.5	5	EPA 300.0	11/05/2015 14:15	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:11	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.287	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 09:52	MHH7131
Calcium (Ca)	2.04	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 09:52	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Iron (Fe)	0.313	mg/L		0.01	1	EPA 200.7	11/06/2015 09:52	MHH7131
Magnesium (Mg)	6.39	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Manganese (Mn)	0.028	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Nickel (Ni)	0.007	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Potassium (K)	4.22	mg/L		0.1	1	EPA 200.7	11/06/2015 09:52	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
Sodium (Na)	10.3	mg/L		0.05	1	EPA 200.7	11/06/2015 09:52	MHH7131
Zinc (Zn)	0.052	mg/L		0.005	1	EPA 200.7	11/06/2015 09:52	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:03	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:03	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:03	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:03	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	110	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-27

Collection Date: 04-Nov-15 11:20 AM

Sample #: 2015034581

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	17	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	9.8	mg/L		0.2	2	EPA 300.0	11/05/2015 11:17	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 11:17	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 11:17	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 300.0	11/05/2015 11:17	BGN9034
Sulfate	0.13	mg/L		0.1	1	EPA 300.0	11/05/2015 11:17	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:18	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.034	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:05	MHH7131
Calcium (Ca)	0.370	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:05	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Iron (Fe)	3.17	mg/L		0.01	1	EPA 200.7	11/06/2015 10:05	MHH7131
Magnesium (Mg)	1.65	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Manganese (Mn)	0.268	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Potassium (K)	2.54	mg/L		0.1	1	EPA 200.7	11/06/2015 10:05	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
Sodium (Na)	7.60	mg/L		0.05	1	EPA 200.7	11/06/2015 10:05	MHH7131
Zinc (Zn)	0.006	mg/L		0.005	1	EPA 200.7	11/06/2015 10:05	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:10	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:10	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:10	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:10	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	72	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-28

Collection Date: 04-Nov-15 9:35 AM

Sample #: 2015034582

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>ALKALINITY (FIXED END POINT 4.5)</u>								
Alkalinity (mg/L CaCO ₃)	21	mg/L (CaCO ₃)		20	1	SM2320B	11/06/2015 12:33	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	1.7	mg/L		0.1	1	EPA 300.0	11/05/2015 11:34	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 11:34	BGN9034
Nitrate	4.3	mg/L		0.1	1	EPA 300.0	11/05/2015 11:34	BGN9034
Nitrate as N	0.98	mg-N/L		0.023	1	EPA 300.0	11/05/2015 11:34	BGN9034
Sulfate	0.34	mg/L		0.1	1	EPA 300.0	11/05/2015 11:34	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:20	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.029	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:09	MHH7131
Calcium (Ca)	3.95	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:09	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Iron (Fe)	0.051	mg/L		0.01	1	EPA 200.7	11/06/2015 10:09	MHH7131
Magnesium (Mg)	1.27	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Manganese (Mn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Potassium (K)	2.09	mg/L		0.1	1	EPA 200.7	11/06/2015 10:09	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
Sodium (Na)	4.97	mg/L		0.05	1	EPA 200.7	11/06/2015 10:09	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:09	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:17	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:17	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:17	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:17	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	73	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-29

Collection Date: 04-Nov-15 9:30 AM

Sample #: 2015034583

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	14	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	5.0	mg/L		0.1	1	EPA 300.0	11/05/2015 11:52	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 11:52	BGN9034
Nitrate	1.4	mg/L		0.1	1	EPA 300.0	11/05/2015 11:52	BGN9034
Nitrate as N	0.32	mg-N/L		0.023	1	EPA 300.0	11/05/2015 11:52	BGN9034
Sulfate	1.4	mg/L		0.1	1	EPA 300.0	11/05/2015 11:52	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:23	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.130	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:14	MHH7131
Calcium (Ca)	0.985	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:14	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Iron (Fe)	0.328	mg/L		0.01	1	EPA 200.7	11/06/2015 10:14	MHH7131
Magnesium (Mg)	1.90	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Manganese (Mn)	0.010	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Potassium (K)	1.66	mg/L		0.1	1	EPA 200.7	11/06/2015 10:14	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
Sodium (Na)	5.99	mg/L		0.05	1	EPA 200.7	11/06/2015 10:14	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:14	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:24	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:24	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:24	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:24	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	62	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-30

Collection Date: 04-Nov-15 8:00 AM

Sample #: 2015034584

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>ALKALINITY (FIXED END POINT 4.5)</u>								
Alkalinity (mg/L CaCO ₃)	28	mg/L (CaCO ₃)		20	1	SM2320B	11/06/2015 12:33	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	3.9	mg/L		0.1	1	EPA 300.0	11/05/2015 12:10	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 12:10	BGN9034
Nitrate	2.4	mg/L		0.1	1	EPA 300.0	11/05/2015 12:10	BGN9034
Nitrate as N	0.54	mg-N/L		0.023	1	EPA 300.0	11/05/2015 12:10	BGN9034
Sulfate	0.68	mg/L		0.1	1	EPA 300.0	11/05/2015 12:10	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:25	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.021	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:18	MHH7131
Calcium (Ca)	5.71	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:18	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Iron (Fe)	0.573	mg/L		0.01	1	EPA 200.7	11/06/2015 10:18	MHH7131
Magnesium (Mg)	2.14	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Manganese (Mn)	0.009	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Potassium (K)	1.62	mg/L		0.1	1	EPA 200.7	11/06/2015 10:18	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
Sodium (Na)	5.59	mg/L		0.05	1	EPA 200.7	11/06/2015 10:18	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:18	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:31	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:31	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:31	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:31	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	85	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-31

Collection Date: 04-Nov-15 8:55 AM

Sample #: 2015034585

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>ALKALINITY (FIXED END POINT 4.5)</u>								
Alkalinity (mg/L CaCO ₃)	46	mg/L (CaCO ₃)		20	1	SM2320B	11/06/2015 12:33	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	1.9	mg/L		0.1	1	EPA 300.0	11/05/2015 17:13	BGN9034
Fluoride	0.13	mg/L		0.1	1	EPA 300.0	11/05/2015 17:13	BGN9034
Nitrate	3.7	mg/L		0.1	1	EPA 300.0	11/05/2015 17:13	BGN9034
Nitrate as N	0.83	mg-N/L		0.023	1	EPA 300.0	11/05/2015 17:13	BGN9034
Sulfate	1.2	mg/L		0.1	1	EPA 300.0	11/05/2015 17:13	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:27	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.024	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:30	MHH7131
Calcium (Ca)	7.53	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:30	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Iron (Fe)	0.509	mg/L		0.01	1	EPA 200.7	11/06/2015 10:30	MHH7131
Magnesium (Mg)	3.73	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Manganese (Mn)	0.015	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Potassium (K)	1.65	mg/L		0.1	1	EPA 200.7	11/06/2015 10:30	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
Sodium (Na)	7.79	mg/L		0.05	1	EPA 200.7	11/06/2015 10:30	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:30	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:59	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:59	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:59	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 19:59	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	97	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: BC-32

Collection Date: 04-Nov-15 10:20 AM

Sample #: 2015034586

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>LOW LEVEL ALKALINITY (FIXED END POINT)</u>								
Alkalinity (mg/L CaCO ₃)	14	mg/L (CaCO ₃)		5	1	SM 2320B4d	11/07/2015 10:44	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	2.2	mg/L		0.2	2	EPA 300.0	11/05/2015 21:06	BGN9034
Fluoride	< 0.2	mg/L		0.2	2	EPA 300.0	11/05/2015 21:06	BGN9034
Nitrate	3.6	mg/L		0.2	2	EPA 300.0	11/05/2015 21:06	BGN9034
Nitrate as N	0.82	mg-N/L		0.023	1	EPA 300.0	11/05/2015 21:06	BGN9034
Sulfate	850	mg/L		20	200	EPA 300.0	11/05/2015 21:06	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:29	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.058	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:34	MHH7131
Calcium (Ca)	159	mg/L	B2	0.1	10	EPA 200.7	11/06/2015 10:34	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
Iron (Fe)	0.033	mg/L		0.01	1	EPA 200.7	11/06/2015 10:34	MHH7131
Magnesium (Mg)	109	mg/L		0.05	10	EPA 200.7	11/06/2015 10:34	MHH7131
Manganese (Mn)	0.013	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
Nickel (Ni)	0.021	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
Potassium (K)	6.58	mg/L		0.1	1	EPA 200.7	11/06/2015 10:34	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
Sodium (Na)	28.9	mg/L		0.05	1	EPA 200.7	11/06/2015 10:34	MHH7131
Zinc (Zn)	0.014	mg/L		0.005	1	EPA 200.7	11/06/2015 10:34	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:06	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:06	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:06	MHALL3
Selenium (Se)	5.98	ug/L		1	1	EPA 200.8	11/05/2015 20:06	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	1300	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: SW-1

Collection Date: 04-Nov-15 2:30 PM

Sample #: 2015034587

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>ALKALINITY (FIXED END POINT 4.5)</u>								
Alkalinity (mg/L CaCO ₃)	26	mg/L (CaCO ₃)		20	1	SM2320B	11/06/2015 12:33	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	3.6	mg/L		0.2	2	EPA 300.0	11/05/2015 19:01	BGN9034
Fluoride	< 0.2	mg/L		0.2	2	EPA 300.0	11/05/2015 19:01	BGN9034
Nitrate	0.45	mg/L		0.2	2	EPA 300.0	11/05/2015 19:01	BGN9034
Nitrate as N	0.10	mg-N/L		0.023	1	EPA 300.0	11/05/2015 19:01	BGN9034
Sulfate	130	mg/L		5	50	EPA 300.0	11/05/2015 19:01	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:32	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.060	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:38	MHH7131
Calcium (Ca)	49.9	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:38	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Iron (Fe)	1.86	mg/L		0.01	1	EPA 200.7	11/06/2015 10:38	MHH7131
Magnesium (Mg)	4.86	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Manganese (Mn)	0.235	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Potassium (K)	6.13	mg/L		0.1	1	EPA 200.7	11/06/2015 10:38	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
Sodium (Na)	3.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:38	MHH7131
Zinc (Zn)	0.043	mg/L		0.005	1	EPA 200.7	11/06/2015 10:38	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:13	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:13	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:13	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:13	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	240	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: LEACHATE

Collection Date: 04-Nov-15 10:20 AM

Sample #: 2015034588

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>ALKALINITY (FIXED END POINT 4.5)</u>								
Alkalinity (mg/L CaCO ₃)	220	mg/L (CaCO ₃)		20	1	SM2320B	11/06/2015 12:33	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	90	mg/L		2.5	25	EPA 300.0	11/05/2015 21:24	BGN9034
Fluoride	< 2.5	mg/L		2.5	25	EPA 300.0	11/05/2015 21:24	BGN9034
Nitrate	8.9	mg/L		2.5	25	EPA 300.0	11/05/2015 21:24	BGN9034
Nitrate as N	2.0	mg-N/L		0.023	1	EPA 300.0	11/05/2015 21:24	BGN9034
Sulfate	1600	mg/L		50	500	EPA 300.0	11/05/2015 21:24	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:34	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	0.016	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Boron (B)	6.57	mg/L		0.05	1	EPA 200.7	11/06/2015 10:46	MHH7131
Calcium (Ca)	643	mg/L	B2	0.1	10	EPA 200.7	11/06/2015 10:46	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Iron (Fe)	0.047	mg/L		0.01	1	EPA 200.7	11/06/2015 10:46	MHH7131
Magnesium (Mg)	82.4	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Manganese (Mn)	9.01	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Nickel (Ni)	0.010	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Potassium (K)	6.79	mg/L		0.1	1	EPA 200.7	11/06/2015 10:46	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
Sodium (Na)	6.40	mg/L		0.05	1	EPA 200.7	11/06/2015 10:46	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:46	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	1.19	ug/L		1	1	EPA 200.8	11/05/2015 20:20	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:20	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:20	MHALL3
Selenium (Se)	2160	ug/L		10	10	EPA 200.8	11/05/2015 20:20	MHALL3
<u>TOTAL DISSOLVED SOLIDS</u>								
TDS	120	mg/L		25	1	SM2540C	11/05/2015 14:15	CJELLIO

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Order # J15100577

Site: FIELD BLANK

Collection Date: 04-Nov-15 2:50 PM

Sample #: 2015034589

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<u>ALKALINITY (FIXED END POINT 4.5)</u>								
Alkalinity (mg/L CaCO ₃)	< 20	mg/L (CaCO ₃)		20	1	SM2320B	11/06/2015 12:33	GHUTCHI
<u>INORGANIC IONS BY IC</u>								
Chloride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 16:37	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 16:37	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 16:37	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 300.0	11/05/2015 16:37	BGN9034
Sulfate	< 0.1	mg/L		0.1	1	EPA 300.0	11/05/2015 16:37	BGN9034
<u>MERCURY (COLD VAPOR) IN WATER</u>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 245.1	11/10/2015 17:37	ACPAYNE
<u>TOTAL RECOVERABLE METALS BY ICP</u>								
Barium (Ba)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Boron (B)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:42	MHH7131
Calcium (Ca)	0.017	mg/L	B2	0.01	1	EPA 200.7	11/06/2015 10:42	MHH7131
Chromium (Cr)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Copper (Cu)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Iron (Fe)	< 0.01	mg/L		0.01	1	EPA 200.7	11/06/2015 10:42	MHH7131
Magnesium (Mg)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Manganese (Mn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Nickel (Ni)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Potassium (K)	< 0.1	mg/L		0.1	1	EPA 200.7	11/06/2015 10:42	MHH7131
Silver (Ag)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
Sodium (Na)	< 0.05	mg/L		0.05	1	EPA 200.7	11/06/2015 10:42	MHH7131
Zinc (Zn)	< 0.005	mg/L		0.005	1	EPA 200.7	11/06/2015 10:42	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>								
Arsenic (As)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:27	MHALL3
Cadmium (Cd)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:27	MHALL3
Lead (Pb)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:27	MHALL3
Selenium (Se)	< 1	ug/L		1	1	EPA 200.8	11/05/2015 20:27	MHALL3

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.
- M4** The spike recovery value was unusable since the analyte concentration in the sample was disproportionate to the spike level. The associated Laboratory Control Spike recovery was acceptable.

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Order # J15100577

Level II QC Summary

Q15110126 ALK_FIX4.5 ALKALINITY (FIXED END POINT 4.5)

Duplicate # 1

Parent Sample: J15100577 -- 2015034587

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>		<u>RPD</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO ₃)		25.8	mg/L (CaCO ₃)	1		0.194	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO ₃)		79.2	mg/L (CaCO ₃)	1	81.6	97.1	80	120	-

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Order # J15100577

Level II QC Summary

Q15110149 ALK_LL_Fix LOW LEVEL ALKALINITY (FIXED END POINT)

Duplicate # 1

Parent Sample: J15100577 -- 2015034575

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>		<u>RPD</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		5.58	mg/L (CaCO3)	1		0.183	-

Duplicate # 2

Parent Sample: J15100577 -- 2015034586

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>		<u>RPD</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		13.6	mg/L (CaCO3)	1		0.334	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		7.61	mg/L (CaCO3)	1	8.16	93.2	80	120	-

LCS # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		6.79	mg/L (CaCO3)	1	8.16	83.2	80	120	-

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Order # J15100577

Level II QC Summary

Q15110093 Dionex INORGANIC IONS BY IC

Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Chloride	0.0241	0.0241	mg/L	1	0.1	< 1/2 RDL	-
Fluoride	0.0453	0.0453	mg/L	1	0.1	< 1/2 RDL	-
Nitrate	0.0056	0.0056	mg/L	1	0.1	< 1/2 RDL	-
Sulfate	0.0122	0.0122	mg/L	1	0.1	< 1/2 RDL	-

IS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Chloride	7.31	7.31	mg/L	1	5	99.9	80	120	-
Fluoride	5.28	5.28	mg/L	1	5	104	80	120	-
Nitrate	4.89	4.89	mg/L	1	5	97.4	80	120	-
Sulfate	5.16	5.16	mg/L	1	5	98.6	80	120	-

ISD # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Chloride	7.3	7.3	mg/L	1	5	99.6	80	120	0.351	-
Fluoride	5.28	5.28	mg/L	1	5	104	80	120	0.025	-
Nitrate	4.88	4.88	mg/L	1	5	97.3	80	120	0.0431	-
Sulfate	5.16	5.16	mg/L	1	5	98.8	80	120	0.128	-

IS # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Chloride	7.11	7.11	mg/L	1	5	104	80	120	-
Fluoride	5.48	5.48	mg/L	1	5	107	80	120	-
Nitrate	8.69	8.69	mg/L	1	5	101	80	120	-
Sulfate	6.32	6.32	mg/L	1	5	102	80	120	-

ISD # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Chloride	7.11	7.11	mg/L	1	5	104	80	120	0.0695	-
Fluoride	5.48	5.48	mg/L	1	5	107	80	120	0.0317	-
Nitrate	8.7	8.7	mg/L	1	5	101	80	120	0.0378	-
Sulfate	6.3	6.3	mg/L	1	5	102	80	120	0.238	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Chloride	5.2	5.2	mg/L	1	5	104	80	120	-
Fluoride	5.15	5.15	mg/L	1	5	103	80	120	-
Nitrate	5.01	5.01	mg/L	1	5	100	80	120	-
Sulfate	5.12	5.12	mg/L	1	5	102	80	120	-

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Order # J15100577

Level II QC Summary

Q15110197 HG 245.1 MERCURY (COLD VAPOR) IN WATER

Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	-0.002	-0.002	ug/L	1	0.05	< 1/2 RDL	-

Blank # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	-0.02	-0.02	ug/L	1	0.05	< 1/2 RDL	-

Blank # 3

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	-0.029	-0.029	ug/L	1	0.05	< 1/2 RDL	-

Blank # 4

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	-0.024	-0.024	ug/L	1	0.05	< 1/2 RDL	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	1.96	1.96	ug/L	1	2	98	85	115	-

LCS # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	1.91	1.91	ug/L	1	2	95.6	85	115	-

LCS # 3

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	1.89	1.89	ug/L	1	2	94.3	85	115	-

LCS # 4

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	1.9	1.9	ug/L	1	2	94.8	85	115	-

MS # 1

Parent Sample: J15100405 -- 2015033922

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	0.995	0.995	ug/L	1	1	101	70	130	-

MSD # 1

Parent Sample: J15100405 -- 2015033922

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Mercury (Hg)	1	1	ug/L	1	1	102	70	130	0.787	-

MS # 2

Parent Sample: J15100406 -- 2015033939

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	0.172	0.172	ug/L	1	1	19.2	70	130	-

MSD # 2

Parent Sample: J15100406 -- 2015033939

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Mercury (Hg)	0.167	0.167	ug/L	1	1	18.7	70	130	2.64	-

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Order # J15100577

Level II QC Summary

Q15110197 HG 245.1 MERCURY (COLD VAPOR) IN WATER

Parent Sample: J15100543 -- 2015034418											
MS # 3	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	Qualifier	
	Mercury (Hg)	0.945	0.945	ug/L	1	1	96.1	70	130	-	
Parent Sample: J15100543 -- 2015034418											
MSD # 3	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	RPD	Qualifier
	Mercury (Hg)	0.995	0.995	ug/L	1	1	101	70	130	5.07	-
Parent Sample: J15100544 -- 2015034429											
MS # 4	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	Qualifier	
	Mercury (Hg)	0.985	0.985	ug/L	1	1	100	70	130	-	
Parent Sample: J15100544 -- 2015034429											
MSD # 4	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	RPD	Qualifier
	Mercury (Hg)	0.975	0.975	ug/L	1	1	99	70	130	1.01	-
Parent Sample: J15100544 -- 2015034438											
MS # 5	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	Qualifier	
	Mercury (Hg)	0.968	0.968	ug/L	1	1	98.5	70	130	-	
Parent Sample: J15100544 -- 2015034438											
MSD # 5	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	RPD	Qualifier
	Mercury (Hg)	0.938	0.938	ug/L	1	1	95.5	70	130	3.09	-
Parent Sample: J15100577 -- 2015034580											
MS # 6	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	Qualifier	
	Mercury (Hg)	0.973	0.973	ug/L	1	1	98.9	70	130	-	
Parent Sample: J15100577 -- 2015034580											
MSD # 6	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	RPD	Qualifier
	Mercury (Hg)	0.953	0.953	ug/L	1	1	96.9	70	130	2.04	-
Parent Sample: J15100536 -- 2015034383											
MS # 7	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	Qualifier	
	Mercury (Hg)	0.914	0.914	ug/L	1	1	93.1	70	130	-	
Parent Sample: J15100536 -- 2015034383											
MSD # 7	Parameter	Measured	Final	Units:	Dil	Spike	% Recovery	LCL	UCL	RPD	Qualifier
	Mercury (Hg)	0.947	0.947	ug/L	1	1	96.4	70	130	3.48	-

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Order # J15100577

Level II QC Summary

Q15110083 ICP_TRM TOTAL RECOVERABLE METALS BY ICP

Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Barium (Ba)	0.00005	0.00005	mg/L	1	0.005	< 1/2 RDL	-
Boron (B)	0.000089	0.000089	mg/L	1	0.05	< 1/2 RDL	-
Calcium (Ca)	0.00643	0.00643	mg/L	1	0.01	> 1/2 RDL	-
Chromium (Cr)	0.000302	0.000302	mg/L	1	0.005	< 1/2 RDL	-
Copper (Cu)	0.000466	0.000466	mg/L	1	0.005	< 1/2 RDL	-
Iron (Fe)	0.00073	0.00073	mg/L	1	0.01	< 1/2 RDL	-
Magnesium (Mg)	-0.000126	-0.000126	mg/L	1	0.005	< 1/2 RDL	-
Manganese (Mn)	0.000002	0.000002	mg/L	1	0.005	< 1/2 RDL	-
Nickel (Ni)	-0.000065	-0.000065	mg/L	1	0.005	< 1/2 RDL	-
Potassium (K)	-0.00435	-0.00435	mg/L	1	0.1	< 1/2 RDL	-
Silver (Ag)	-0.00029	-0.00029	mg/L	1	0.005	< 1/2 RDL	-
Sodium (Na)	0.00206	0.00206	mg/L	1	0.05	< 1/2 RDL	-
Zinc (Zn)	-0.000076	-0.000076	mg/L	1	0.005	< 1/2 RDL	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Barium (Ba)	5.14	5.14	mg/L	1	5	103	80	120	-
Boron (B)	5.06	5.06	mg/L	1	5	101	80	120	-
Calcium (Ca)	5.07	5.07	mg/L	1	5	101	80	120	-
Chromium (Cr)	5.06	5.06	mg/L	1	5	101	80	120	-
Copper (Cu)	5.07	5.07	mg/L	1	5	101	80	120	-
Iron (Fe)	5	5	mg/L	1	5	99.9	80	120	-
Magnesium (Mg)	5.02	5.02	mg/L	1	5	100	80	120	-
Manganese (Mn)	5.05	5.05	mg/L	1	5	101	80	120	-
Nickel (Ni)	5.09	5.09	mg/L	1	5	102	80	120	-
Potassium (K)	5.02	5.02	mg/L	1	5	100	80	120	-
Silver (Ag)	0.497	0.497	mg/L	1	0.5	99.3	80	120	-
Sodium (Na)	5.06	5.06	mg/L	1	5	101	80	120	-
Zinc (Zn)	5.06	5.06	mg/L	1	5	101	80	120	-

MS # 1

Parent Sample: J15100577 -- 2015034575

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Barium (Ba)	5.11	5.11	mg/L	1	5	101	75	125	-
Boron (B)	5.09	5.09	mg/L	1	5	101	75	125	-
Calcium (Ca)	113	#Error	mg/L	1	5	0	75	125	-
Chromium (Cr)	4.94	4.94	mg/L	1	5	98.8	75	125	-
Copper (Cu)	5.02	5.02	mg/L	1	5	100	75	125	-
Iron (Fe)	5.66	5.66	mg/L	1	5	98.7	75	125	-
Magnesium (Mg)	50.8	50.8	mg/L	1	5	109	75	125	-
Manganese (Mn)	4.95	4.95	mg/L	1	5	98.5	75	125	-

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Order # J15100577

Level II QC Summary

Q15110083 ICP_TRM TOTAL RECOVERABLE METALS BY ICP

MS # 1

Parent Sample: J15100577 -- 2015034575

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Nickel (Ni)	4.89	4.89	mg/L	1	5	97.4	75	125	-
Potassium (K)	11.3	11.3	mg/L	1	5	104	75	125	-
Silver (Ag)	0.491	0.491	mg/L	1	0.5	98.2	75	125	-
Sodium (Na)	29.1	29.1	mg/L	1	5	108	75	125	-
Zinc (Zn)	4.87	4.87	mg/L	1	5	97	75	125	-

MSD # 1

Parent Sample: J15100577 -- 2015034575

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Barium (Ba)	5.1	5.1	mg/L	1	5	101	75	125	0.218	-
Boron (B)	5.1	5.1	mg/L	1	5	101	75	125	0.217	-
Calcium (Ca)	113	#Error	mg/L	1	5	0	75	125	0	-
Chromium (Cr)	4.97	4.97	mg/L	1	5	99.4	75	125	0.626	-
Copper (Cu)	5.01	5.01	mg/L	1	5	100	75	125	0.0598	-
Iron (Fe)	5.69	5.69	mg/L	1	5	99.3	75	125	0.586	-
Magnesium (Mg)	50.9	50.9	mg/L	1	5	112	75	125	2.78	-
Manganese (Mn)	4.97	4.97	mg/L	1	5	99	75	125	0.486	-
Nickel (Ni)	4.91	4.91	mg/L	1	5	97.9	75	125	0.471	-
Potassium (K)	11.3	11.3	mg/L	1	5	104	75	125	0.386	-
Silver (Ag)	0.491	0.491	mg/L	1	0.5	98.4	75	125	0.193	-
Sodium (Na)	28.9	28.9	mg/L	1	5	105	75	125	2.57	-
Zinc (Zn)	4.92	4.92	mg/L	1	5	97.9	75	125	0.923	-

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Order # J15100577

Level II QC Summary

Q15110088 IMS_TRM TOTAL RECOVERABLE METALS BY ICP-MS

Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Arsenic (As)	0.0736	0.0736	ug/L	1	1	< 1/2 RDL	-
Cadmium (Cd)	-0.0027	-0.0027	ug/L	1	1	< 1/2 RDL	-
Lead (Pb)	-0.0028	-0.0028	ug/L	1	1	< 1/2 RDL	-
Selenium (Se)	0.0145	0.0145	ug/L	1	1	< 1/2 RDL	-
Silver (Ag)	-0.0012	-0.0012	ug/L	1	1	< 1/2 RDL	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Arsenic (As)	52.1	52.1	ug/L	1	50	104	80	120	-
Cadmium (Cd)	50.3	50.3	ug/L	1	50	101	80	120	-
Lead (Pb)	50.8	50.8	ug/L	1	50	102	80	120	-
Selenium (Se)	51.4	51.4	ug/L	1	50	103	80	120	-
Silver (Ag)	49	49	ug/L	1	50	97.9	80	120	-

MS # 1

Parent Sample: J15100577 -- 2015034576

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Arsenic (As)	54.9	54.9	ug/L	1	50	107	80	120	-
Cadmium (Cd)	50.8	50.8	ug/L	1	50	101	80	120	-
Lead (Pb)	51	51	ug/L	1	50	102	80	120	-
Selenium (Se)	51.8	51.8	ug/L	1	50	100	80	120	-
Silver (Ag)	49.1	49.1	ug/L	1	50	98.2	80	120	-

MSD # 1

Parent Sample: J15100577 -- 2015034576

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Arsenic (As)	54.1	54.1	ug/L	1	50	105	80	120	1.59	-
Cadmium (Cd)	49.9	49.9	ug/L	1	50	98.8	80	120	1.99	-
Lead (Pb)	51.3	51.3	ug/L	1	50	102	80	120	0.489	-
Selenium (Se)	51.6	51.6	ug/L	1	50	99.7	80	120	0.42	-
Silver (Ag)	48.3	48.3	ug/L	1	50	96.6	80	120	1.66	-

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Order # J15100577

Level II QC Summary

Q15110084 TDS TOTAL DISSOLVED SOLIDS

Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
TDS		0	mg/L	1	25	< 1/2 RDL	-

Duplicate # 1

Parent Sample: J15100404 -- 2015033911

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RPD</u>	<u>Qualifier</u>
TDS		214	mg/L	1	2.84	-

Duplicate # 2

Parent Sample: J15100404 -- 2015033912

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RPD</u>	<u>Qualifier</u>
TDS		449	mg/L	1	0.887	-

LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
TDS		99	mg/L	1	100	99	90	110	-



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy Analytical Laboratories
 Mail Code MG03A2 (Building 7405)
 13339 Hagers Ferry Rd
 Huntersville, N. C. 28078
 (980) 875-5245
 Fax: (980) 875-5038

Analytical Laboratory Use Only			
LIMS #	J15100577	MATRIX: GW_RCRA	Samples Originating From
Logged By	Date & Time	SAMPLE PROGRAM Ground Water <input checked="" type="checkbox"/> NPDES Drinking Water <input type="checkbox"/> UST RCRA Waste <input type="checkbox"/>	
Vendor:	10-5-15 7:54	Cooler Temp (C)	1.9

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 DISTRIBUTION
 ORIGINAL to LAB,
 COPY to CLIENT

Revised: 12/4/2014

1) Project Name: BELEWS CREEK FGD LANDFILL PERMIT # 85-05		2) Phone No: 980-875-5257
3) Client CHUCK CAMPBELL, TIM HUNSUCKER, ED SULLIVIAN		4) Fax No: 980-875-4349
5) Business Unit: 20003	6) Process: BENVWS	7) Resp. To: BC00
8) Task ID:	9) Activity ID:	10) Mail Code: MGO3A3

LAB USE ONLY	13 Sample Description or ID			14 Collection Information		15 Analyze \$ Required	16 Grab	17 Tests	18 Volume	19 Analytes	20 Total # of Containers
11 Lab ID	Date	Time	Signature	TESTS	16 Grab						
2015034575	BC-20	11/4/15	1100	WC	6	X			1	(Metals Prep - TRM) (ICP-EPA-200.7) Ag, B, Ba, Ca, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Zn (13) / Hg (EPA 245.1) (1) / (IMS-EPA-200.8) As, Cd, Pb, Se (4)	3
2015034576	BC-21	11/4/15	1235	WC	6	X			1	NO3-N, SO4, Cl, F - (IC) and F_Aik (4.5)	3
2015034577	BC-22	11/4/15	1155	WC	6	X			1	TDS	3
2015034578	BC-23A	11/4/15	0755	WC	6	X			1		3
2015034579	BC-25	11/4/15	1355	PSP	6	X			1		3
2015034580	BC-26	11/4/15	1255	PSP	6	X			1		3
2015034581	BC-27	11/4/15	1120	PSP	6	X			1		3
2015034582	BC-28	11/4/15	0935	WC	6	X			1		3
2015034583	BC-29	11/4/15	0930	PSP	6	X			1		3
2015034584	BC-30	11/4/15	0800	PSP	6	X			1		3
2015034585	BC-31	11/4/15	0855	WC	6	X			1		3
2015034586	BC-32	11/4/15	1020	WC	6	X			1		3
2015034587	SW-1	11/4/15	1430	PSP	6	X			1		3
2015034588	LEACHATE	11/4/15	1020	PSP	6	X			1		3
2015034589	FIELD BLANK	11/4/15	1450	PSP	5	X			1		2

Customer to sign & date below

21) Relinquished By <i>Peck Powell</i>	Date/Time 11/5/15 0725	Accepted By: <i>Alison Amankye</i>	Date/Time 11/5/15 0725
21) Relinquished By	Date/Time	Accepted By:	Date/Time
21) Relinquished By	Date/Time	Accepted By:	Date/Time
23) Seal/Locked By	Date/Time	Sealed/Lock Opened By	Date/Time

Customer, important please indicate desired turnaround	22 Requested Turnaround
	14 Days <input checked="" type="checkbox"/>
	7 Days _____
	48 Hr _____
	*Other _____ * Add. Cost Will Apply

24) Comments:
 Regulatory Agency : NCDENR/DWM -SW Section - State EDD Format Required / Permit # 85-05
 Use indicated or comparable analytical methods

Customer must Complete

Customer to complete appropriate columns to right

20 Total # of Containers