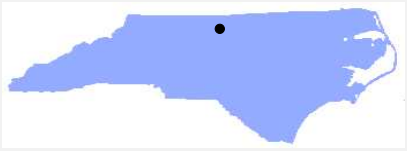
NC Division of Energy, Mineral, and Land Resources
FACT SHEET FOR NPDES STORMWATER PERMIT DEVELOPMENT
NPDES Stormwater Permit NCS000573

Facility Information			
Applicant/Facility Name:	Duke Energy Carolinas, LLC/Belews Creek Steam Station		
Applicant Address:	526 South Church St., Mail Code EC13K, Charlotte, North Carolina 28201		
Facility Address:	3195 Pine Hall Road, Belews Creek, North Carolina 27009		
Permitted Flow:	Not applicable (stormwater discharges only)		
Industrial Activities:	Primary SIC Code: 4911 – Electric Services		
Permit Status:	New NPDES stormwater discharge permit		
County:	Stokes County		
Miscellaneous			
Receiving Stream:	West Belews Creek	Regional Office:	Winston-Salem
Stream Classification:	C	State Grid / USGS Quad:	Belews Lake
303(d) List/ TMDL?	No/statewide Hg	Permit Writer:	K. Pickle
Subbasin, Stream Index #:	03-02-01, 22-27-9-(3)	Date:	June 27, 2016



Facility Location: Lat. 36° 16' 50" N Long. -80° 03' 33" W

BACKGROUND

Duke Energy's Belews Creek Steam Station is a 2200-megawatt coal-fired electricity generating plant in Stokes County. The facility came on line in 1974. The active portions of the power generation and supporting facilities cover approximately 700 acres.

In addition to NPDES wastewater discharge permit NC0024406, the facility also holds air permit #01983T28, hazardous wastes permit NCD000856591, Distribution of Residual Solids permit WQ0000452, and industrial landfill permits 85-03, 85-04, and 85-05. The facility is subject to federal NPDES stormwater discharge permit requirements per 40 CFR §122.26 (b)(14)(vii).

The company applied to the NC Division of Energy, Mineral, and Land Resources Stormwater Permitting Program (SPP) for a separate NPDES stormwater discharge permit for this facility in August 2014, with additional amended information in September and October 2014.

This facility discharges to West Belews Creek/Belews Lake, a class C water in the Roanoke River Basin. Stormwater discharges will enter West Belews Creek/Belews Lake which is subject to the statewide TMDL for mercury. No specific reductions or Hg limits are required for NPDES stormwater permittees at this time.

WHY THIS FACILITY IS SUBJECT TO A PERMIT

Federal NPDES regulations define **stormwater discharge associated with industrial activity** in 40 CFR §122.26 (b)(14) as:

> "…the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part 122. For the categories of industries identified in this section, the term includes, but

is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas."

As a result of the significant exposed materials and industrial activities at the Belews Creek facility, all stormwater-only discharges from the above named areas at the facility meet the definition of stormwater discharge associated with industrial activity.

PROPOSED MONITORING FOR STORMWATER DISCHARGES

The Division considered potential pollutants from the regulated industrial activities as well as analytical data submitted as part of the permit application from a sampling event in July 2014. Single samples at three outfalls included measurements of O&G, COD, Cl, Fl, SO_4, Hg, Al, As, Ba, B, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Se, Sb, Tl, Zn, TDS, TSS, specific conductance, hardness, temperature, and pH. Duke also submitted results from a second sampling event in September 2014. Single samples were analyzed for the same parameters from four additional outfalls.

Unlike most stormwater permits in its program, the Division is proposing a permit structure with outfall-specific monitoring for discharges. The Division considered including parameters based on anticipated potential pollutants in the drainage area and on the sampling results. The Division is proposing the monitoring parameters for each outfall as shown in the table below. All outfalls discharge directly to West Belews Creek/Belews Lake.

Proposed Stormwater Discharge Outfall (SDO) Monitoring	
SW001and SW024 *Adjacent areas draining the entrance road guard house and rail embankment.*	
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from all areas and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
SW002 *Identified by Duke as commingled non-contact cooling water commingled with stormwater. No longer a regulated stormwater-only outfall.*	
The permit application reports that Duke will apply for a modification to wastewater permit NC0024406.	
SW003 and SW004 *Draining the Powerhouse roof and the area of limestone and gypsum conveyors. The regular ash haul route is through these areas.*	
Polychlorinated Biphenyls (PCBs)	Semi-annual monitoring; **may be discontinued after two consecutive tests are below detection. BASIS:** Electrical equipment in the Powerhouse, or the immediately adjacent areas, may have contained PCBs, which persist in the environment if ever released. If all PCBs have been removed and past releases cleaned up, these compounds should not be detected.
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.

Proposed Stormwater Discharge Outfall (SDO) Monitoring	
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
Non-polar Oil & Grease (EPA 1664 SGT-HEM)	Semi-annual monitoring. **BASIS:** Potential pollutant from lubricants; Method 1664 SGT-HEM targets petroleum-based O&G.
Priority Pollutant Metals Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, and Zn.	Semi-annual monitoring. **BASIS:** Regular coal ash haul route goes through the drainage areas.
Boron	Semi-annual monitoring. **BASIS:** CCW constituent / coal tracer.
SW005 and SW006 *Draining the area of the Old Warehouse and the area of limestone and gypsum conveyors. The regular ash haul route is through these areas. Transformers and electrical equipment are present in the area.*	
Polychlorinated Biphenyls (PCBs)	Semi-annual monitoring; **may be discontinued after two consecutive tests are below detection. BASIS:** Electrical equipment in the Old Warehouse area, may have contained PCBs, which persist in the environment if ever released. If all PCBs have been removed and past releases cleaned up, these compounds should not be detected.
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
Non-polar Oil & Grease (EPA 1664 SGT-HEM)	Semi-annual monitoring. **BASIS:** Potential pollutant from lubricants; Method 1664 SGT-HEM targets petroleum-based O&G.
Priority Pollutant Metals Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, and Zn.	Semi-annual monitoring. **BASIS:** Regular coal ash haul route goes through the drainage areas.
Boron	Semi-annual monitoring. **BASIS:** CCW constituent / coal tracer.
SW007 and SW022 *Adjacent areas draining the limestone railcar staging area.*	
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
SW008 *Duke reports that this outfall drains a small portion of the plant with no industrial activity. No permit is required for this non-regulated discharge.*	
SW009 *Draining the area between the FGD Landfill and the gypsum stacker. The regular ash haul route is through this area. An oil storage facility is present.*	
Polychlorinated Biphenyls (PCBs)	Semi-annual monitoring; **may be discontinued after two consecutive tests are below detection. BASIS:** PCBs persist in the environment if ever released. If all PCBs have been removed and past releases cleaned up, these compounds should not be detected.
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator.
Non-polar Oil & Grease (EPA 1664 SGT-HEM)	Semi-annual monitoring. **BASIS:** Potential pollutant from lubricants; Method 1664 SGT-HEM targets petroleum-based O&G. Applicant reports oil storage facility in the contributing drainage area.
Priority Pollutant Metals Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, and Zn.	Semi-annual monitoring. **BASIS:** Regular coal ash haul route goes through the drainage area.
Boron	Semi-annual monitoring. **BASIS:** CCW constituent/ coal tracer
SW010 *Duke reports that this outfall has been abandoned, and all runoff from the FGD Residuals Landfill is currently pumped to the Ash Basin. Under the current reported operating mode and site configuration, an NPDES stormwater discharge permit is not required.*	

Proposed Stormwater Discharge Outfall (SDO) Monitoring	
SW011, SW012, SW013, SW014, and SW015 *Draining areas with transformers, or immediately adjacent to current transformers and electrical equipment.*	
Polychlorinated Biphenyls (PCBs)	Semi-annual monitoring; **may be discontinued after two consecutive tests are below detection. BASIS:** Electrical equipment in the adjacent Powerhouse, or these areas, may have contained PCBs, which persist in the environment if ever released. If all PCBs have been removed and past releases cleaned up, these compounds should not be detected.
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
Non-polar Oil & Grease (EPA 1664 SGT-HEM)	Semi-annual monitoring. **BASIS:** Potential pollutant from lubricants and oil-filled equipment; Method 1664 SGT-HEM targets petroleum-based O&G.

Proposed Stormwater Discharge Outfall (SDO) Monitoring	
SW016 and SW017 *Draining the Switchyard.*	
Polychlorinated Biphenyls (PCBs)	Semi-annual monitoring; **may be discontinued two consecutive tests are below detection. BASIS:** Electrical equipment in the switchyard may have contained PCBs, which persist in the environment if ever released. If all PCBs have been removed and past releases cleaned up, these compounds should not be detected.
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
Non-polar Oil & Grease (EPA 1664 SGT-HEM)	Semi-annual monitoring. **BASIS:** Potential pollutant from oil-filled equipment; Method 1664 SGT-HEM targets petroleum-based O&G.
SW018 *Identified by Duke as flowing into drainage area 18A, and having no direct discharge to surface waters. This location does not qualify as a regulated stormwater-only outfall.*	
Permit coverage is not required under current site circumstances.	
SW018A and SW018B *Draining a gravel laydown area and a gravel parking lot.*	
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
SW019, SW020, SW021, SW023, and SW026 *Duke reports no industrial activity in Drainage Areas 19 and 26. Duke reports stormwater runoff arising in Drainage Areas 20, 21, and 23 is pumped to the Ash Basin. A stormwater permit is not required under current operating modes and site configuration.*	
Permit coverage is not required for these outfalls.	
SW025 *Draining the used oil and hazardous waste storage facility, gravel parking, and gravel materials storage area. Duke reports currently sheet flow directly into West Belews Creek. Permit to require conversion to a discrete discharge point to facilitate monitoring of runoff flow.*	
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals.
Non-polar Oil & Grease (EPA 1664 SGT-HEM)	Semi-annual monitoring. **BASIS:** Potential pollutant from oil-filled equipment; Method 1664 SGT-HEM targets petroleum-based O&G.

Proposed Stormwater Discharge Outfall (SDO) Monitoring	
SW027 *Draining the Craig Road Landfill.*	
Total Suspended Solids (TSS)	Semi-annual monitoring. **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator.
pH	Semi-annual monitoring. **BASIS:** Pollutant indicator.
Priority Pollutant Metals Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, and Zn.	Semi-annual monitoring. **BASIS:** Coal ash disposal facility.
Boron	Semi-annual monitoring. **BASIS:** CCW constituent/ coal tracer

STORMWATER BENCHMARKS AND TIERED RESPONSE

Rather than limits, North Carolina NPDES Stormwater permits contain benchmark concentrations. Stormwater benchmarks are numerical action levels for stormwater monitoring. **Benchmarks are not effluent limits, and benchmark exceedances are not permit violations.** Benchmarks provide facilities a tool for assessing the significance of pollutants in stormwater discharges and the effectiveness of best management practices (BMPs). Benchmark concentrations are intended as guidelines for the facility's development and implementation of the Stormwater Pollution Prevention Plan (SPPP).

Benchmark exceedances require the permittee to increase monitoring, increase management actions, increase record keeping, and/or install stormwater BMPs in a tiered program. The permit establishes a tiered approach to specify actions the permittee must take in response to analytical results above benchmark concentrations (Part II, Section B., following Table 7 in the Draft permit). The tiered structure of the permit provides the permittee and NCDEMLR wide flexibility to address issues that may arise with one or more parameters and/or outfalls.

Metals benchmarks are calculated to mimic acute water quality standards and with the guidance of NC's Division of Water Resources (DWR). NC DWR follows established federal procedures for calculating acute standards when developing the benchmarks. Just like the acute standards, metals benchmarks normally reflect one half of the calculated Final Acute Value (the "½ FAV"). In most cases, translation into total recoverable values is based on an assumed hardness of 25 mg/l and a total suspended solids (TSS) concentration of 10 mg/L. Acute standards protect aquatic life from negative impacts of short-term exposure to higher levels of chemicals where the discharge enters a waterbody. The Stormwater Permitting Program applies this approach because of the ephemeral nature of rainfall events and the associated discharges.

The Division may evaluate results to determine if a smaller suite of parameters for some outfalls is adequate to characterize potential pollution or BMP effectiveness. For example, one or more metals or other parameters may serve as an adequate tracer for the presence of ash pollution during disturbance or ash removal in specific drainage areas at this site. For parameters that do not have a stormwater benchmark, the Division may develop a benchmark value if appropriate toxicity data become available or if rising trends in concentrations suggest a persistent source.

A summary of the benchmarks in the draft permit, and their basis, is below:

Parameter	Benchmark	Basis
Antimony (Sb), mg/L (Total)	0.09	Acute Aquatic Criterion, ½ FAV
Arsenic (As), mg/L (Total)	0.34	Acute Aquatic Criterion, ½ FAV
Beryllium (Be), mg/L (Total)	0.065	Acute Aquatic Criterion, ½ FAV
Cadmium (Cd), mg/L (Total)	0.003	Acute Aquatic Criterion, ½ FAV

Parameter	Benchmark	Basis
Chromium (Cr), mg/L (Total)	0.9	½ FAV, based on (Cr III + Cr VI) acute thresholds and assumption that industrial activities here are not a source of hexavalent chromium.
Copper (Cu), mg/L (Total)	0.010	Acute Aquatic Criterion, ½ FAV
Lead (Pb), mg/L (Total)	0.075	Acute Aquatic Criterion, ½ FAV
Mercury (Hg), ng/L (Total)	N/A	Monitoring only, CCW/Coal Constituent. Hg influenced by regional transport and wet deposition. Values above 12 ng/L (NC WQ standard) should be noted on the DMR but do not trigger Tier Responses.
Nickel (Ni), mg/L (Total)	0.335	Acute Aquatic Criterion, ½ FAV
Polychlorinated biphenyl compounds (PCBs), µg/L	Detected	NC Water Quality Standards vs. present Arochlors quantitation levels (higher than standard)
Selenium (Se), mg/L (Total)	0.056	½ FAV, NC-specific, based on 1986 Study on Se impacts in North Carolina
Silver (Ag), mg/L (Total)	0.0003	Acute Aquatic Criterion, ½ FAV. (The Division notes this value is below the practical quantitation level (PQL) of 1 µg/L of EPA Method 200.8)
Boron (B), mg/L	N/A	Monitoring only, CCW/Coal Constituent. Narrative National Recommended Water Quality Criterion.
Thallium (Tl), mg/L (Total)	N/A	Monitoring Only, CCW/Coal constituent. National Recommended Human Health Criterion.
Zinc (Zn), mg/L (Total)	0.126	Acute Aquatic Criterion, ½ FAV
Total Suspended Solids (TSS), mg/L	100	National Urban Runoff Program (NURP) Study, 1983
Non-Polar Oil & Grease, *EPA Method 1664 (SGT-HEM)*, mg/L	15	Review of other state's daily maximum benchmark concentration for this more targeted O&G; NC WQ Standard that does not allow oil sheen in waters.
pH	6-9	NC Water Quality Standard (Range)

STORMWATER POLLUTION PREVENTION PLAN

The proposed permit conditions reflect the Environmental Protection Agency's (EPA) and North Carolina's pollution prevention approach to stormwater permitting. The Division's maintains that implementation of Best Management Practices (BMPs) and traditional stormwater management practices that control the source of pollutants meets the definition of Best Available Technology (BAT) and Best Conventional Pollutant Control Technology (BCT). The permit conditions are not numeric effluent limitations but are designed to be flexible requirements for implementing site-specific plans to minimize and control pollutants in stormwater discharges associated with the industrial activity. Title 40 Code of Federal Regulations (CFR) §122.44(k)(2) **authorizes the use of BMPs in lieu of numeric effluent limitations in NPDES permits when the agency finds numeric effluent limitations to be infeasible.** The agency may also impose BMP requirements which are "reasonably necessary" to carry out the purposes of the Act under the authority of 40 CFR 122.44(k)(3). The conditions proposed in this draft permit are included under the authority of both of these regulatory provisions. In essence, the pollution prevention and BMP requirements operate as limitations on effluent discharges that reflect the application of BAT/BCT.

Determining specific BMPs that are appropriate for the site and activities are the permittee's responsibility and the permit strives not to limit what BMPs can be used. The permittee should also

refer to the BMPs described in both EPA's Multi-Sector Permit (MSGP) and Industrial Stormwater Fact Sheet for Steam Electric Power Generating Facilities (Sector O) for guidance on pollution prevention measures.

MERCURY MONITORING REQUIREMENTS

The proposed permit requires mercury to be measured in stormwater samples by EPA Method 1631E, which can detect levels as low as 0.5 ng/L. This requirement is consistent with recent federal rule-making that requires NPDES permittees to monitor discharges with sufficiently sensitive test procedures approved under 40 CFR §136. Modifications to 40 CFR §122.44(i) require a method that has a minimum level (ML) at or below the effluent limit (not applicable here), or the lowest minimum level (ML) of EPA approved analytical methods for the measured parameter. Based on results, Method 1631E will be required to quantify levels in these discharges. NC DEMLR understands that this method is more costly and requires a more intensive sampling protocol than most other parameters, and that fish tissue sampling will be provided during the permit cycle. Therefore, no benchmark applies that would trigger tiered response actions. Proposed permit provisions also allow the permittee to use field blank and/or method blank concentrations to adjust reported mercury levels as long as documentation is submitted with the Discharge Monitoring Report (DMR).

FLEXIBILITY IN TIER RESPONSES

Tier Two actions (upon two consecutive benchmark exceedances at an outfall) proposed in this draft permit differ slightly from the Program's standard template and includes **step 4**. That step provides an opportunity for the permittee to propose an **alternative monitoring plan for approval** by the Region:

4. *Alternatively,* in lieu of steps 2 and 3, the permittee may, after two consecutive exceedances, exercise the option of contacting the DEMLR Regional Engineer as provided below in Tier Three. The Regional Engineer may direct the response actions on the part of the permittee as provided in Tier Three, including reduced or additional sampling parameters or frequency. If pursuing this option, the permittee may propose an **alternative monitoring plan** for approval by the Regional Engineer.

The permit therefore allows the permittee to petition the Regional Office for monitoring changes *sooner than* **Tier Three** (upon any four benchmark exceedances) and gives guidance on one option to take. For example, the permittee may request that mercury only be monitored semi-annually under the tiers, or that only parameters over the benchmark be monitored more frequently. In this way, changes to the monitoring scheme for any outfall could be handled outside of a permit modification.

OTHER PROPOSED REQUIREMENTS

- It is standard for Stormwater Pollution Prevention Plan (SPPP) requirements to include an annual certification that stormwater outfalls have been evaluated for the presence of *non-stormwater* discharges, and if any are identified, how those discharges are permitted or otherwise authorized. The draft permit requires this **facility to submit the first certification to DEMLR no later than 90 days after the effective date of the permit** (Part II, Section A.).
- Requirement to submit a request for permit modification if the facility identifies or creates any new outfalls, removes outfalls, or alters any drainage area that changes potential pollutants.
- Proposed federal regulations will require electronic submittal of all discharge monitoring reports (DMRs). If a state does not establish a system to receive such submittals, then permittees must submit DMRs electronically to the Environmental Protection Agency (EPA). The Division anticipates that these regulations will be adopted and is beginning

implementation. Permit provisions addressing this impending requirement is included in Part III, Section B. (General Conditions), 3.e.

- **Quarterly** Qualitative/Visual Monitoring to assure regular observation of outfalls throughout year.
- Requirement to collect the local drainage and create a new discrete stormwater outfall for the waste storage area. The area includes storage for oily wastes, used oil, and hazardous waste. Additionally the gravel-paved area serves as a staging or storage location for other materials. Currently the area discharges in a very short run of sheet flow into the immediately adjacent West Belews Creek.

FISH TISSUE MONITORING

Proposed wastewater permit NC0024406 requires fish tissue monitoring for As, Se, and Hg near the ash pond discharge once every five years. The proposed stormwater permit requires the permittee to **submit a copy of monitoring results to the DEMLR Stormwater Permitting Program** (Central Office) within 30 days of receiving results and indicate the location of sampling in relation to stormwater discharge outfalls. *DEMLR is requiring the fish tissue analysis results be submitted separately because the proposed NC0024406 permit does not require submittal to DWR until application for permit renewal.*

PROPOSED SCHEDULE FOR PERMIT ISSUANCE:

Draft Permit to Public Notice: July 15, 2016
Permit Scheduled to Issue: September 1, 2016

STATE CONTACT:

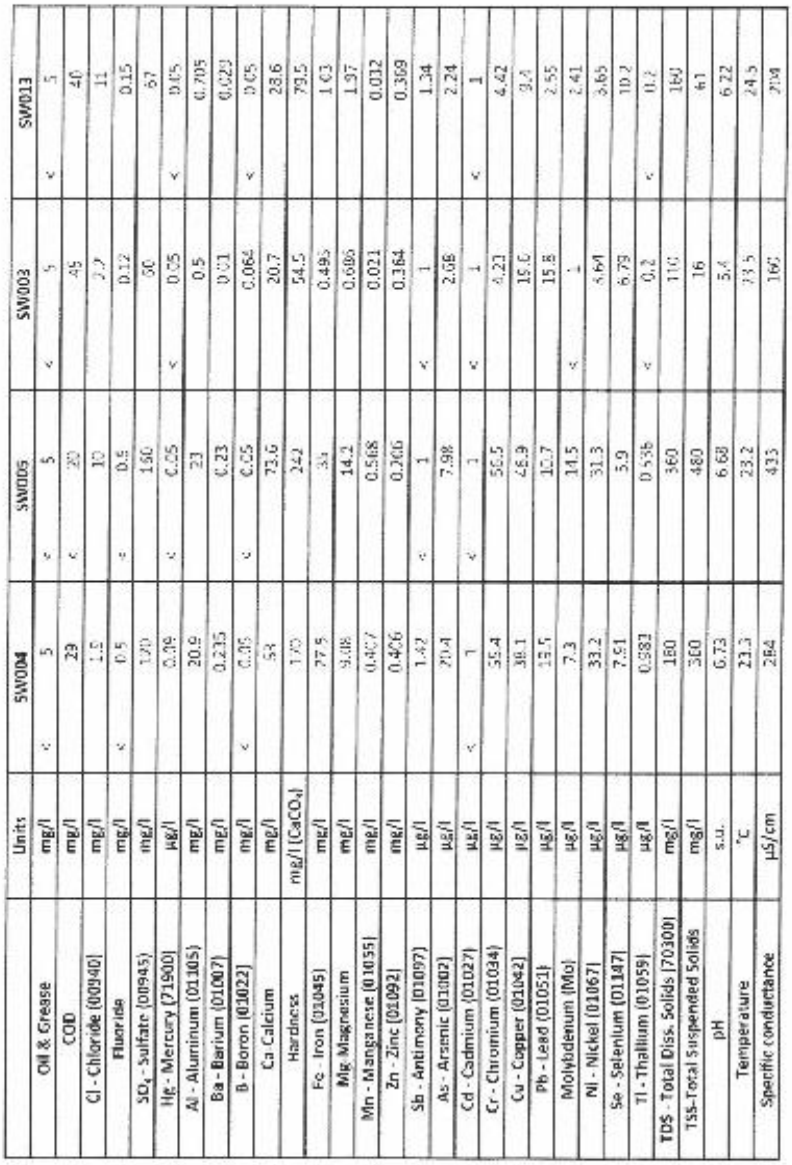
If you have any questions about any of the above information or the attached permit, please contact Bradley Bennett at (919) 807-6378 or bradley.bennett@ncdenr.gov.

STORMWATER SAMPLING RESULTS FROM BELEWS CREEK STEAM STATION, JULY 15, 2014:

	Units	SW002		SW006		SW015	
Oil & Grease	mg/l	<	5	<	5	<	5
COD	mg/l	<	20		25		24
Cl - Chloride (00940)	mg/l		7.9	<	1		4.5
Fluoride	mg/l	<	1	<	1	<	1
SO4 - Sulfate (00945)	mg/l		15		770		39
Hg - Mercury (71900)	µg/l	<	0.05		0.18	<	0.05
Al - Aluminum (01105)	mg/l		0.153		12.3		2.27
Ba - Barium (01007)	mg/l		0.021		0.16		0.03
B - Boron (01022)	mg/l		0.077	<	0.05	<	0.05
Ca-Calcium	mg/l		10.4		181		13.8
Hardness	mg/l ($CaCO_3$)		41		480		46.1
Fe - Iron (01045)	mg/l		0.184		19.9		2.72
Mg-Magnesium	mg/l		3.67		6.76		2.82
Mn - Manganese (01055)	mg/l		0.016		0.355		0.255
Zn - Zinc (01092)	mg/l		0.011		0.664		0.468
Sb - Antimony (01097)	µg/l	<	1	<	1	<	1
As - Arsenic (01002)	µg/l	<	1		4.32		5.7
Cd - Cadmium (01027)	µg/l	<	1	<	1	<	1
Cr - Chromium (01034)	µg/l	<	1		25		5.87
Cu - Copper (01042)	µg/l		5.91		20.5		12.2
Pb - Lead (01051)	µg/l	<	1		10.5		4.91
Molybdenum (Mo)	µg/l		1.7		1.86		1.97
Ni - Nickel (01067)	µg/l	<	1		14.8		8.39
Se - Selenium (01147)	µg/l	<	1		4.89		5.54
Tl - Thallium (01059)	µg/l	<	0.2		0.326		0.351
TDS - Total Diss. Solids (70300)	mg/l		89		690		100
TSS-Total Suspended Solids	mg/l	<	5		320		75
pH	s.u.		7.21		6.4		6.41
Temperature	°C		27.9		24.7		24.6
Specific conductance	µS/cm		155.8		755		144.7
Flow	MGD						

Temperatures of samples from SW002, SW006, SW015 were above the preservation limit of 6 degrees celsius (7.9 degrees celsius) upon receipt in the lab

STORMWATER SAMPLING RESULTS FROM BELEWS CREEK STEAM STATION, SEPTEMBER 4, 2014:



	Units	SW004		SW005		SW003		SW013	
Oil & Grease	mg/l	<	5	<	5	<	5	<	5
COD	mg/l		29	<	20		49		40
Cl - Chloride (00940)	mg/l		1.5		10		2.9		11
Fluoride	mg/l	<	0.5	<	0.5		0.12		0.15
SO_4 - Sulfate (00945)	mg/l		120		160		50		67
Hg - Mercury (71900)	µg/l		0.09	<	0.05	<	0.05	<	0.05
Al - Aluminum (01105)	mg/l		20.9		23		0.5		0.705
Ba - Barium (01007)	mg/l		0.235		0.23		0.01		0.023
B - Boron (01022)	mg/l	<	0.05	<	0.05		0.064	<	0.05
Ca Calcium	mg/l		34		73.6		20.7		28.6
Hardness	mg/l ($CaCO_3$)		120		242		54.5		79.5
Fe - Iron (01045)	mg/l		27.5		34		0.495		1.03
Mg Magnesium	mg/l		9.08		14.2		0.686		1.97
Mn - Manganese (01055)	mg/l		0.457		0.568		0.021		0.032
Zn - Zinc (01092)	mg/l		0.406		0.266		0.364		0.369
Sb - Antimony (01097)	µg/l		1.42	<	1	<	1		1.34
As - Arsenic (01002)	µg/l		20.4		7.98		2.68		2.24
Cd - Cadmium (01027)	µg/l	<	1	<	1	<	1	<	1
Cr - Chromium (01034)	µg/l		35.4		56.5		4.23		4.42
Cu - Copper (01042)	µg/l		38.1		48.9		15.0		9.4
Pb - Lead (01051)	µg/l		13.5		10.7		15.8		2.55
Molybdenum (Mo)	µg/l		7.3		14.5	<	1		2.41
Ni - Nickel (01067)	µg/l		33.2		31.3		5.64		3.65
Se - Selenium (01147)	µg/l		7.51		5.9		6.79		10.2
Tl - Thallium (01059)	µg/l		0.383		0.536	<	0.2	<	0.2
TDS - Total Diss. Solids (70300)	mg/l		180		360		110		180
TSS-Total Suspended Solids	mg/l		360		480		16		61
pH	s.u.		6.73		6.68		5.4		6.22
Temperature	°C		23.3		23.2		23.5		24.5
Specific conductance	µS/cm		284		435		165		209