DENR/DEMLR
FACT SHEET FOR NPDES STORMWATER PERMIT DEVELOPMENT
NPDES No. NCS000575

Facility Information			
Applicant/Facility Name:	Asheville Steam Electric Plant		
Applicant Address:	200 CP&L Drive, Arden, North Carolina 28704		
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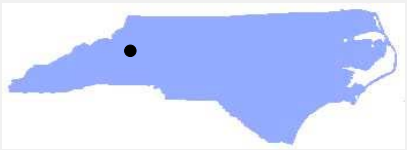
Permitted Flow:	N/A (Stormwater Discharges Only)		
Industrial Activities:	Primary SIC Code: 4911 – Electric Services		
Permit Status:	New NPDES Stormwater Permit		
County:	Buncombe County		
Miscellaneous			
Receiving Stream:	Lake Julian and an unnamed tributary to Powell Creek	Regional Office:	Asheville
Stream Classification:	C	State Grid / USGS Quad:	
303(d) Listed?	Hg, statewide	Permit Writer:	Mike Randall
Subbasin:	04-03-02	Date:	April 27, 2015



Facility Location: Lat. 35° 28' 01" N Long. 82° 32' 13" W

BACKGROUND

Duke Energy's Asheville Steam Electric Plant is a two unit coal fired steam electric plant in Buncombe County. The plant has been is service since 1964, and is the largest electric generating facility in western North Carolina. The two coal burning units can produce approximately 383 megawatts of electricity. Each coal unit is equipped with a selective catalytic reduction unit to remove nitrogen oxides, and electric precipitator to remove fly ash, and a scrubber to remove sulfur oxides from flue gases.

The two internal combustion turbine generating units, added in 1999 and 2000, can produce approximately 165 megawatts each burning either No. 2 fuel oil of natural gas. In addition to both the coal and internal combustion turbine units, there is a coal unloading and storage area, a No. 2 diesel fuel unloading area, two electrical switchyards, a cooling water system (including a recirculating, man-made cooling reservoir, Lake Julian, with an intake and hot-pond discharge), an ash pond, and an artificial wetland for waste water treatment.

The plant site also has numerous buildings including a maintenance and welding shop, storerooms, wastewater treatment facilities, gas cylinder storage, two de-mineralized water tanks, hydrogen storage, oil storage, and urea, gasoline and kerosene storage.

FACILITY STORMWATER DRAINAGE

A temporary and lined rim ditch and pond system which lies within the 1964 ash pond is located approximately 1300 feet south of the plant. This rim ditch/pond system serves as a wastewater treatment facility for the separation of ash and water and is permitted to discharge to the French Broad River, NPDES NCS000396. All facilities storm drains either gravity-feed or are pumped to this system with the exception of the Administration Building Parking and main access road (non-industrial activity) and the back access road.

Overflow from the rim ditch/pond system is through an under and over weit to a second holding pond and on to the French Broad River. The final outlet structure at the second holding pond is also an under and over design. As an added control measure, both the ash and second pond have oil absorbent/containment booms permanently deployed.

The main entrance access road (CP&L Drive off of Long Shoals Road) drains directly to Lake Julian (Stormwater Outfall SW004, SW005, and SW006) and a rear plant access road that leads to New Rockwood Road at the rear of the plant drains to Lake Julian (Stormwater Outfall SW001, SW002, SW003, SW-7, and SW-8). Stormwater Outfall SW001, SW002, SW003, SW-7, and SW-8 are the only stormwater outfalls associated with industrial activities.

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 [sic] 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 [sic] drained from the above described areas."

PROPOSED MONITORING FOR STORMWATER DISCHARGES

The Division considered potential pollutants from past and present industrial activities (coal-fired electric generation, plant decommissioning, and future ash removal) and data submitted in the application submitted July 30, 2014, and October 30, 2014. Sampling included 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, conductivity, hardness, temperature, and pH.

Unlike most stormwater permits in its program, the Division is proposing a permit structure with outfall-specific monitoring for discharges. Parameters are based on potential pollutants in the drainage area, sampling results, and in some cases, dependent upon future activities (e.g., ash removal through the drainage area). Below is a table of the proposed monitoring for each outfall at the Riverbend site. All outfalls ultimately discharge to the Lake Julian and an unnamed tributary to Powell Creek.

Stormwater Discharge Outfall (SDO) Monitoring	
SW001, SW002, SW003, SW-7 and SW-8 access road area	
Total Suspended Solids (TSS)	Semi-annual monitoring (*quarterly if coal or ash transport*). **BASIS:** Potential pollutant from drainage area and BMP effectiveness indicator. This outfall will be impacted by Phase I of the Coal Ash Excavation Plan (hauling ash from Ash Stack).
Priority Pollutant Metals Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, and Zn.	**Quarterly** monitoring *only if coal or coal ash transported through this drainage area*. **BASIS:** Coal combustion waste (CCW) constituents; includes metals incorporated into the coal ash monofill constructed for the company's Mayo Steam Electric Plant (another site). Monitoring is quarterly because this outfall will be impacted by Phase I of the Coal Ash Excavation Plan.
Boron	**Quarterly** monitoring *only if coal or coal ash transported through this drainage area*. **BASIS:** Coal combustion waste (CCW) constituent / coal tracer. Monitoring is quarterly because this outfall will be impacted by Phase I of the Coal Ash Excavation Plan.
pH	**Quarterly** monitoring *only if coal or coal ash transported through this drainage area*. **BASIS:** Pollutant indicator and important to interpreting toxicity potential of metals. Monitoring is quarterly because this outfall will be impacted by Phase I of the Coal Ash Excavation Plan.

The stormwater outfall identified as SW004, SW005, and SW006 (outfalls along the main entrance) is not associated with industrial activities. Any modifications to these outfalls that result in a potential stormwater discharge associated with past or present industrial activities will require a modification to this permit.

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 10). 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.

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
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.

The permit proposes some language specific to coal fired power plants (and in particular, to those plants being decommissioned). 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.

It is important to note that the majority of stormwater at this facility is ultimately routed into the waste treatment system (ash pond), and those discharges are regulated by the NPDES *wastewater* permit.

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 documented is submitted with the Data Monitoring Report (DMR).

FLEXIBILITY IN TIER RESPONSES

Tier Two actions (upon two consecutive benchmark exceedances at an outfall) proposed in this draft permit differs slightly from the Program's standard template and includes **step 6**. That step provides an opportunity for the permittee to propose an **alternative monitoring plan for approval** by the Region:

> *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 the alternative above after two consecutive exceedances, 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 permitttee 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. This site may trigger this requirement during demolition or ash removal activities.
- Standard text that allows a permittee to forgo collecting samples outside of regular operating hours was omitted in Part II because this power plant is not currently operating. The Division expects the permittee to apply best professional judgment and consider the safety of its personnel in fulfilling sampling obligations under the permit.
- 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.

PROPOSED SCHEDULE FOR PERMIT ISSUANCE:

Draft Permit to Public Notice: [Date]
Permit Scheduled to Issue: [Date]

STATE CONTACT:

If you have any questions about any of the above information or the attached permit, please contact Mike Randall at (919) 807-6374 or mike.randall@ncdenr.gov.