Report of Proceedings

Public Hearing on NPDES Permit NC0004774
Duke Energy Carolinas, LLC
Buck Combined Cycle Station

June 13, 2018
Rowan County Cooperative Extension
Salisbury, North Carolina

NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

September 17, 2018

MEMORANDUM

TO: Linda Culpepper, Interim Director LC
Division of Water Resources

FROM: Jon Risgaard, Chief, Animal Feeding Operations and Groundwater Section
Division of Water Resources

SUBJECT: Hearing Officer's Report and Recommendations
Duke Energy Carolinas, Draft NPDES Wastewater Permit No. NC0004774
Buck Combined Cycle Station, Rowan County

On June 13, 2018, I served as Hearing Officer for a public hearing at the Rowan County Cooperative Extension offices in Salisbury, North Carolina. The purpose of the hearing was to gather public comments regarding three draft NPDES permits for the Duke Energy Carolinas, LLC, Buck facilities in Salisbury:

- Buck Steam Station, NCS000578;
- Buck Combustion Turbine Combined Cycle (CTCC) Station, NCS000554; and
- Buck Combined Cycle Station, NC0004774.

The hearing was required under the Coal Ash Management Act of 2014 (NCGS 130A-306.200 et seq.). Public notice of the hearing (Attachment A) was published in the Salisbury Post on May 13, 2018, and posted on the DEQ website at https://bit.ly/2KSG7rm. Oral and written comments were received at the hearing, and additional written comments were received during the comment period, which ended on June 20, 2018.

I have considered all comments received and have prepared separate reports for each of the Division Directors responsible for the stormwater and wastewater permits. This report presents my findings and recommendations for the subject NPDES wastewater permit, NC0004774. The permit and fact sheet (Attachments B and C) highlight my recommended changes.

The report has been prepared using the following outline:

I. Site History/ Permit Overview
II. Public Hearing
III. Comments Received/ Response to Comments
IV. Recommendations for Action
Attachments

I. Site History / Permit Overview

Duke Energy's Buck Combined Cycle Station is a steam electric generating facility located on Dukeville Road, near Salisbury, in Rowan County. The facility includes the Buck Steam Station (BSS), now retired; a new Combustion Turbine Combined Cycle (CTCC) plant; and the associated coal ash and waste settling ponds. Treated wastewaters are discharged to the Yadkin River (upper portion of High Rock Lake) under permit NC0004774. The generating facilities are subject to federal effluent limitations guidelines, 40 CFR Part 423, for steam electric power generating facilities.

The generating facilities have undergone major changes since the permit was last issued in 2011. Four coal-fired units and three gas-fired combustion turbine units, with a total rated capacity of 369 MW, were still in operation in 2011. The facility withdrew large amounts of water from the river (design flow 400 MGD) for the Steam Station's once-through non-contact cooling system. Those seven generating units have now been replaced by the 620 MW gas-fired CTCC plant. As a result, Duke's cooling water needs at Buck and its thermal loads to the river have been greatly reduced (>99%) since 2011.

In 2011, process wastewaters and stormwater from the now-retired units were pumped from the BSS Yard Sump to a system of three coal ash ponds for settling. Most of those flows have now been eliminated. Wastewaters from the CTCC plant are pumped from the CTCC waste sump to the ash ponds. The treated wastes were and continue to be discharged from the ponds to a side channel of the Yadkin River at Outfall 002.

For these and other reasons, the draft permit prepared by the NPDES staff included significant changes, including the following:

- Revised Limits, Existing Outfall – Process Wastes. Current permit limits at Outfall 002 were previously calculated assuming that the full flow of the river would be available for mixing and dilution. It appears this only occurs when lake levels are high enough that flows spill into the side channel near the outfall; at other times, stream flows stay within the main river channel and provide little mixing and dilution at the outfall. The limits were recalculated for the latter condition, and several parameters showed reasonable potential to cause exceedances of water quality standards in the side channel. The permit includes new limits for these parameters and allows Duke a six-month period to take appropriate steps to come into compliance.
- New Outfalls, New Limits – Process Wastes. Mandates for management of coal ash (Coal Ash Management Act (CAMA) of 2014) require that Duke stabilize and dispose of accumulated ash in facilities across the state. The process discharges at Buck must be diverted from the ponds to the mainstem of the river before remediation of the ponds can begin. The permit includes limits for discharges to the proposed new outfalls 001A/ 006.
- New Outfalls, New Limits – Ash Pond Remediation. When remediation of the ash ponds begins, wastewaters from the decanting and dewatering of ash will discharge at Outfall 002. The permit includes limits for these discharges. It also includes limits for the discharge of these wastewaters at a new Outfall 007 on the mainstem of the river.
- New Outfalls, New Limits – Ash Pond Seeps. Concerns have arisen regarding seepage of wastewaters from the coal ash ponds into surface waters. The permit includes requirements for discharges from the two constructed seeps identified at the site. The discharges are

designated as Outfalls 111 and 117. Other seeps from the ponds will be governed under a Special Order of Consent (SOC), signed on July 12, 2018.

- Assorted Other Changes. The permit includes additional special conditions regarding instream monitoring, fish tissue monitoring, 316(a) thermal variance, 316(b) intake structure, ash pond operations, groundwater compliance boundaries, and electronic reporting.

II. Public Hearing

A public hearing was held on June 13, 2018, at 6:00 p.m., at the Rowan County Cooperative Extension offices in Salisbury. The purpose of the hearing was to gather comments regarding the proposed issuance of one wastewater and two stormwater NPDES permits for the Duke Energy Carolinas Buck facilities in Salisbury, North Carolina. This report focuses on those comments pertaining to the draft NPDES wastewater permit.

Notice of the hearing (Attachment A) was published in the Salisbury Post on May 13, 2018, and posted on the DEQ website at https://bit.ly/2KSG7rm. The public comment period began upon publication of the notice and closed on June 20, 2018.

Approximately 30 people attended the public hearing including six members of the public; nine Duke employees; and 15 staff members of the DWR and DEMLR Raleigh offices, the Mooresville Regional Office, DEQ's Public Information Office, and the hearing officer. (The attendance sign-in sheet, Attachment D, does not capture all of those attending.).

As hearing officer, I provided opening comments (Attachment E). Bethany Georgoulias and Rick Riddle from DEMLR's NPDES Stormwater Program provided overviews of the proposed stormwater permits. Mike Templeton provided an overview of DWR's NPDES wastewater permit (Attachment F).

One person registered to speak in advance of the hearing. The speaker sign-in sheet is included as Attachment G. The speaker, representing the Southern Environmental Law Center (SELC), Yadkin Riverkeeper, and Waterkeeper Alliance, noted the progress made thus far at the Buck facility but suggested several changes to make the permit more protective and require more of Duke Energy. The speaker's notes, provided at the public hearing, are combined with more thorough written comments in Attachment H.

Written comments on the draft permit were received from Southern Environmental Law Center, Duke Energy, and EPA Region 4. Essentially all of the comments pertain to the wastewater permit. Written comments are provided in Attachment H to this report.

The Division's permitting staff has reviewed all comments and provided responses. The comments are summarized below, along with responses and, where appropriate, any changes recommended for the final permit and fact sheet. All of the recommended changes are minor or serve to make the permit consistent with the Division's approach with other Duke Energy permits.

The proposed Buck Combined Cycle Station NPDES permit, NC0004774, is presented in Attachment B. Recommended changes are shown in underline/ strikethrough format. The revised fact sheet, including a summary of the proposed changes to the permit, can be found in the Fact Sheet, Attachment C.

III. Comments Received/ Response to Comments

This section provides a summary of the comments received, responses to those comments, and proposed action where appropriate.

A. Summary of Comments from the SELC on behalf of Itself, the Yadkin Riverkeeper, and Waterkeeper Alliance (Leslie Griffith, Staff Attorney) (Attachment H)

DEQ Must Impose Sufficiently Protective Effluent Limitations on Outfalls.

- **Comment:** "NPDES permits control pollution by setting (1) limits based on the technology available to treat pollutants ("technology based effluent limits") and (2) any additional limits necessary to protect water quality ("water quality-based effluent limits") on the wastewater dischargers. […] A NPDES permit must assure compliance with all statutory and regulatory requirements, including state water quality standards."

  Response: The Division agrees. The Buck wastewater permit does, in fact, apply appropriate TBELs to all waste discharges subject to the effluent limitations guidelines found in 40 CFR Part 423. The permit also applies limits wherever the available data indicate the discharge has a reasonable potential to cause an exceedance of standards in the receiving waters.

- **Comment:** "The draft permit […] treats dilution as the solution to pollution, allowing Duke Energy to pollute more just by changing where it dumps its wastewater."

  Response: Effluent limits in the permit are generally classified as technology-based (TBELs) or water quality-based limits (WQBELs). The permit contains both TBELs and WQBELs where necessary.

  TBELs are performance standards that apply to discharges of a certain type regardless of impacts to the receiving stream. TBELs in the Buck permit come from EPA's effluent limitations guidelines for steam electric generating facilities, found in 40 CFR Part 423. TBELs for a discharge do not change with changes in dilution.

  WQBELs are established when necessary to protect water quality in the receiving stream; that is, to ensure that applicable standards are met in the stream. The Division uses an EPA-approved approach to setting WQBELs. Effluent data are analyzed to determine the "maximum *predicted* effluent concentration"; stream and wastewater flows and numeric standards for each parameter of interest are used to calculate the "maximum *allowable* effluent concentration". If the maximum predicted value for a parameter exceeds the maximum allowable value, the discharge is said to exhibit reasonable potential to cause an exceedance of that water quality standard. If a parameter shows reasonable potential, it is given a limit equal to the maximum allowable effluent concentration.

  If a discharge is subject to both TBELs and WQBELs for a parameter, the more stringent limit is applied.

- **Comments:** "Outfall 002 – BSS & CTCC Operations: At least at Outfall 002, this draft permit recognizes that strong numerical limits on pollutants are necessary to protect

water quality […]. However, the permit fails to consistently limit arsenic pollution for this wastestream, and sets no limit for selenium pollution."

Outfalls 002 & 007 – Decanting and Dewatering: The commenter disagrees with the removal of WQBELs for these discharges at Outfall 007 and argues that "technology-based effluent limitations […] must be based on available treatment technology."

Response: Because the receiving water at Outfall 002 does not provide consistent mixing and dilution, as noted on page 2, the process discharges and decanting/ dewatering discharges show reasonable potential to cause exceedances of several water quality standards at that outfall, and water quality-based limits are applied. The Yadkin River mainstem provides approximately 1,000 times more dilution; thus, discharging the same wastewaters at Outfall 007 does not pose a threat to water quality standards there and so does not warrant setting WQBELs.

The permit could still include WQBELs, as suggested. However, the limits would be extremely high due to the higher rate of dilution, as this example shows:

> **Example:**
> Data for the BSS & CTCC discharge at Outfall 002 indicate that, with no available dilution, the discharge has reasonable potential to cause an exceedance of the 10.0 µg/L human health standard for arsenic: the maximum predicted effluent concentration is 87 µg/L, and the maximum allowable effluent concentration is 10.0 µg/L (the standard, with no dilution). So the limit would be set at 10.0 µg/L.
> If this same discharge is sent to the river mainstem, the maximum predicted value will still be 87 µg/L, but the maximum allowable value will increase to 51,600 µg/L. That is, a discharge with 51,600 µg/L arsenic would cause the river to reach but not exceed the standard. The permit could include that limit, but it would serve little purpose, since the effluent is not expected to exceed 87 µg/L.

The EPA's effluent guidelines apply at either outfall but do not include TBELs for arsenic and selenium.

- **Comment:** "To give the numerical limits force, and protect water quality, as required by the Clean Water Act, DEQ must revise the permit by removing the compliance schedule so that the limits become effective immediately after the permit issues."

  Response: In the Division's opinion, a six-month compliance schedule is reasonable for the new limits. And regardless of whether the wastewater is discharged at Outfall 002 or Outfall 001A/006, it will be subject to appropriate and necessary limits: any applicable TBELs as well as WQBELs necessary to prevent exceedances of water quality standards.

- **Comment:** "Available, technology-based limits should apply to protect against pollution no matter where Duke Energy's outfalls are located."

  Response: The EPA's effluent limitations guidelines (ELGs) establish what "available treatment technology" means for various types of industry and what performance standards (TBELs) correspond to such technology. Neither the CWA nor NC general statutes go so far as to require that dischargers provide all known, available, and reasonable means of treatment prior to discharge.

- **Comment:** "The Fact Sheet claims that '[p]er Division guidance, WQBELs for arsenic and selenium are included' at Outfall 007, but no such limits exist in the permit draft itself."

Response: The Division intended at one point to include these limits regardless of reasonable potential; however, it revised its decision. Arsenic and selenium do not show reasonable potential at this outfall, and the limits were removed.

- **Action:** The fact sheet has been corrected to reflect this change; no change to the permit is necessary.

- **Comment:** "It appears […] that Duke Energy has already installed some treatment technology at Buck, since the Fact Sheet refers to "treatment units installed for this purpose" when explaining the Reasonable Potential Analysis. Fact Sheet at 14. There is no reason DEQ cannot set protective limits based on available technology for the Yadkin River when Duke Energy dumps its coal ash polluted water out of its Buck lagoons. At Buck, the same limits that protect the waters around Sutton should be in this permit to protect the Yadkin River.

  Response: Previously, the Division planned to require that treatment units be installed to meet limits at these outfalls. However, state and federal rules do not require treatment *per se* or specify the treatment units to be used; rather they require that the permittee comply with the limits set in its permit. Thus, the Division revised its position and deleted this requirement from the permit. In its place, it will require Duke to cease discharge and notify the Division immediately if decanting or dewatering discharges exceed a threshold level.

  - **Action:** The following paragraph has been added to Special Conditions B.(1.) through B.(4.) that requires Duke to immediately cease discharge and report its findings to the Division if any result of monitoring for As, Se, Hg, Pb, or Ni exceeds 85% of the monthly average limit. The fact sheet has also been revised to reflect the change.

    "If any one of these pollutants (*metals with limits*) reaches 85% of the allowable monthly average effluent discharge concentration during decanting/ dewatering, the facility shall immediately discontinue discharge of the wastewater and report the event to DWR Mooresville Regional Office and Complex NPDES Permitting via telephone and e-mail."

  See previous responses to comments regarding limits based on available technology.

  WQBELs are receiving stream- and facility-specific. Comparison with other permits' limits is not appropriate since each permit has different concentrations of the pollutants, different discharge volumes, and different characteristics and classifications of the receiving streams. Limits at Sutton were calculated to protect water quality standards at that site. Likewise, limits at Buck are calculated to protect standards here.

- **Comment:** Because the Yadkin River/High Rock Lake is a Class WS-V water, and a "lake[] or reservoir[] not designated as trout waters," the applicable standard is 25 NTU. Accordingly, DEQ must revise all references from 50 NTU to 25 NTU.

  Response: The Division agrees.

  - **Action:** The permit and fact sheet has been corrected to reflect a turbidity standard of 25 NTU for discharges from decanting and dewatering operations at Outfalls 002 and 007.

- **Comment:** "DEQ should set a daily maximum daily flow limit for decanting and dewatering—at the same amounts used in the Reasonable Potential Analysis—to ensure the pollution does not exceed the RPA's predictions. This draft permit contains no flow limits for decanting or dewatering. Monitoring data from decanting at Sutton show Duke Energy discharged as much as 45 percent more than the daily flow assumptions used in the RPA."

  Response: Imposing a flow limit would have no effect on limits at Outfall 002, because the Reasonable Potential Analyses (RPAs) were conducted assuming zero dilution. Duke will have to meet water quality standards at the end of the pipe. Thus, by complying with these limits, it will meet the standards at Outfall 002 regardless of the discharge flow rate.

  However, the commenter is correct that the limits at Outfall 007 would not necessarily be protective if discharge flow rates were greater than those used in the RPAs. The flows used in the RPAs are based on pumping rates provided by Duke: 1,200 gpm (1.73 MGD) during decanting and 500 gpm (0.72 MGD) during dewatering.

  - **Action:** The permit and fact sheet have been revised to add flow limits for discharges at Outfall 007: 1.73 MGD for decanting operations, 0.72 MGD for dewatering.

DEQ Must Require More Frequent Monitoring During Decanting and Dewatering.

- **Comment:** "DEQ needs to require weekly, if not daily, monitoring during both decanting and dewatering." "Nothing in the fact sheet demonstrates daily monitoring of ash basin discharges is impractical, particularly during decanting and dewatering."

  Response: The current permit requires quarterly monitoring for most parameters in the pond discharges. This rate is considered adequate to provide representative samples because the size and holding times of the ponds dampen the variability of the discharge characteristics. Given that process flows to the ponds will have ceased, and also given the discharge restrictions linked to monitoring of pH, TSS, turbidity, and solids disturbances, the Division believes that monthly monitoring is sufficient during decanting of free water from the ponds. Monitoring frequencies for most parameters are increased to weekly during dewatering operations, and toxicity monitoring is increased from quarterly to monthly. Again, all discharges are subject to appropriate TBELs and WQBELs.

  The Division agrees that it would be reasonable to increase the monitoring frequency for some parameters to weekly during decanting operations (most parameters must be monitored weekly during dewatering).

  - **Action:** The permit has been revised to increase the monitoring frequencies for total arsenic, total selenium, and total mercury from monthly to weekly for decanting operations at Outfalls 002 and 007.

DEQ Must Require Duke Energy to Implement Physical/Chemical Treatment Technology for Decanting and Dewatering.

- **Comment:** "DEQ must revise the permit to require Duke Energy to implement known, available, and entirely feasible technology to control and monitor pollution."

  Response: The permit still includes all applicable TBELs and WQBELs, and these did not change when the specific treatment requirements were removed. It is Duke's responsibility to choose the appropriate mechanism to achieve the compliance with these limits.

  See previous responses to comments regarding the setting of limits based on available technology.

DEQ Gives No Rational Basis for Increasing the Speed of Decanting and Dewatering to a Potentially Dangerous Rate.

- **Comment:** "DEQ must revise the permit to include appropriate decanting rate limits to protect the receiving waters and the structural integrity of the dams or provide a convincing basis for DEQ's total about-face."

  Response: The 1 foot per week decanting rate was originally determined by the Dam Safety program to address concerns with the structural integrity of the ash pond dams. Dam Safety has explored the issues more thoroughly and determined that 1 foot per day is acceptable.

  As noted previously, the Division agrees that flow limits are warranted at Outfall 007.

  - **Action:** As noted above, the flow limits have been added to the permit at Outfall 007: 1.73 MGD for decanting operations, 0.72 MGD for dewatering.

The Draft Permit Gives Duke Energy Amnesty Going Forward for Illegal Flows of Pollution into Public Waters.

- **Comment:** "DEQ should remove Outfalls 111 and 117 from the permit and require Duke Energy to gather those flows before they reach lakes, rivers, and streams and either direct them to a treatment facility or return them to the lagoons."

  Response: The CWA allows the discharge of pollutants from point sources subject to an NPDES permit. Constructed seeps are point sources and can be regulated in NPDES permits. Monitoring data indicate that seep flows are similar to the water in the ash ponds, which receive no further treatment prior to discharge. Thus, the Division has chosen to establish these constructed seeps as outfalls in the permit. Non-engineered seeps will be governed through a Special Order of Consent with Duke Energy, signed on or about July 12, 2018.

DEQ Must Require Instream Monitoring Closer to Buck's Pollution Discharge.

- **Comment:** "Proposed instream monitoring locations span from 4,000 feet upstream to 10,000 feet downstream. Monitoring at such a vast distance cannot provide useful information on Duke Energy's discharges and their impact on the River. Both upstream

and downstream monitoring locations must be revised to require sampling much closer to Buck."

Response: The picture below shows the Buck site and the approximate location of the upstream and downstream sampling points.

The proposed upstream sampling point is located at the western end of the plant site, just upstream of the raw water intake. The location should provide a representative measure of upstream water quality and is readily accessible.

The proposed downstream sampling point seems to be the closest practical location downstream of Outfall 002. Due to the varied channels in that stretch of the river, the discharge does not reach the mainstem until approximately 3,000 feet downstream of the outfall (when stream flows are within the main river channel). The side channels continue for another 4,000 feet, as shown by the bracket in the picture, and much of the discharge still might not reach the mainstem until 7,000 feet downstream (just upstream of the southward bend). The specified location is not unreasonable.

An intermediate sampling point could provide a clearer indication of the water quality effects of discharges from the other outfalls.

If Duke closes Outfall 002, or if the specified sites prove unsuitable, the Division can reconsider the matter and decide whether other locations would be more suitable.

- **Action:** The permit has been revised to include a third, intermediate instream sampling point and to allow adjustment of the sampling locations in order to ensure representative results.

- **Comment:** "DEQ cannot exempt Duke Energy from monitoring its pollution of the Yadkin River just because it participates in the Yadkin-Pee Dee River Basin Association".

  Response: As noted, an intermediate downstream sampling point will be added to better evaluate the water quality impacts of the various discharges.

This special condition waives the instream monitoring requirements only if Duke is a member of the monitoring coalition and the coalition monitors the same parameters at the same locations and frequencies. Duke has indicated it intends to perform this monitoring itself.

Data compiled and submitted by the coalition is available upon request.

- **Comment:** "We support DEQ's decision to require monthly instream monitoring and require instream monitoring of total bromides."

  Response: Comment noted.

DEQ Must Require Duke Energy to Protect Fish from its Cooling Water Intakes.

- **Comment:** "DEQ does not even attempt to require Duke Energy to comply with Section 316(b) of the Clean Water Act's protections against harm to fish from cooling water intake structures. Under this provision and implementing regulations, Duke Energy must meet best technology available standards for cooling water intake structures. The Cooling Water Intake Structure Rule requires Duke Energy to submit information demonstrating how it will comply. […] DEQ cannot let Duke Energy further delay complying with the cooling water intake structure rules."

  Response: Duke is subject to the Cooling Water Intake Structure requirements in 40 CFR Part 125, Subpart J, and 40 CFR 401.14. The rules require the discharger to meet Best Technology Available (BTA) standards. A closed-cycle recirculating cooling system is one of the pre-approved compliance alternatives for minimizing impingement and entrainment; see §125.94(c)(1) and (e)(1). The CTCC plant employs such a system. Therefore, the Director has tentatively determined that the existing closed-cycle cooling system at Buck satisfies the BTA requirements, pending submittal and acceptance of additional information required under 122.21(r) to confirm that the facility's performance satisfies BTA standards. The draft permit does not reflect this.

  - **Action:** The permit has been revised to replace the text of Special Condition C.(14.) for Intake Structure Requirements with the following, and the fact sheet has been updated accordingly:

    "a. The Director has tentatively determined that operation of the CTCC plant's closed-cycle recirculating system is sufficient to satisfy the Best Technology Available (BTA) standards per 40 CFR Part 125, Subpart J. Full approval is contingent upon the Permittee's submittal and the Director's acceptance of additional information documenting the adequacy of the BTA measures.

    "b. No later than April 30, 2022, the Permittee shall submit to the Division, as specified in Special Condition C.(2.) Notifications and Submittals, all additional information required of it by 40 CFR 122.21(r).

    "c. Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act."

    (See also the 316(b) Comments and Action on page 14.)

Duke Energy has Not Justified Receiving a Continued Temperature Variance.

- **Comment:** "DEQ should not continue an exception Duke Energy does not need. If DEQ does continue the temperature exemption for Duke Energy, it should require the next thermal/mixing study to be complete and submitted well before the next renewal period and for Duke Energy to justify both the need to keep discharging superheated water and the ability of the fish to tolerate it. If Duke Energy cannot make this showing, the variance should terminate."

  Response: The latest BIP (balanced and indigenous population) report from Duke was submitted to DWR with its 2011 permit application. The Division reviewed the report and concluded that the receiving stream near the Buck facilities has a balanced and indigenous macroinvertebrate and fish community. The EPA did not object to this determination.

  Duke greatly reduced its thermal loads when it retired the Buck Steam Station's coal-fired units. It is not clear whether Duke still needs a thermal variance for CTCC plant operations. The discharge will still require a mixing zone, but the size required for the mixing zone has yet to be determined. The aim of this permit condition is to maintain the variance temporarily so that Duke can evaluate whether it needs a variance and can determine the size of the mixing zone needed for its thermal discharges. (Also note the 316(a) action on page 14.)

  Significant environmental benefits have already been realized with the closing of the steam station. Extending the variance for this permit term will not reduce those benefits, nor will ending the variance at this time add to the benefits.

  The facility does not discharge "superheated" water. The discharges from the condenser cooling system for the coal-fired units ranged from 43°F to 95°F from January 2009 until the BSS's closure in March 2013. Duke reported an average of 55°F and a maximum of 58°F for three samples of CTCC plant wastewaters collected for its permit application.

The Permit Must Address a Limit for Bromide Discharges.

- **Comment:** The permit should require monitoring for bromide so that the Division can conduct an RPA, and establish limits for this parameter.

  Response: Bromide is a parameter of interest at some coal-fired facilities. However, numeric standards or criteria do not exist but are necessary for the Division to conduct RPAs and set limits. The EPA is currently working to develop bromide criteria. The Division expects to address the matter when that time approaches. As a first step, Duke will sample for bromide as part of its instream monitoring at Buck. If it is detected, or if other information indicates a compelling need, the Division will consider additional monitoring at the facility so that RPAs can be conducted when the criteria are available.

DEQ Must Require Duke Energy to Manage Its Stormwater Properly.

- **Comment:** "The draft permit improperly purports to authorize Duke Energy to route stormwater runoff through the coal ash lagoon without limitation. The permit must be revised to prohibit routing stormwater to the basin by the end of this year pursuant to

the N.C. Coal Ash Management Act, which requires: 'On or after December 31, 2018, the discharge of stormwater into a coal combustion surface impoundment at an electric generating facility where the coal-fired generating units are no longer producing coal combustion residuals is prohibited.'"

Response: Duke has begun demolition of the Buck Steam Station powerhouse and associated structures and expects to complete the project before the end of 2018. At that point, the remaining sources of contaminated stormwater to the ponds will be eliminated.

- ❖ **Action:** Special Conditions A.(1.)(b.) and A.(5.)(b.) have been revised to prohibit the discharge of stormwater from the Buck Steam Station to the ash ponds on or after December 31, 2018. The fact sheet has also been revised accordingly.

Other Comments from SELC, et al.

- **Comment:** The data used to conduct RPA analyses for Buck discharges were inadequate. The Division should "use sampling data available to it through the Comprehensive Site Assessment and Corrective Action Plan processes under the coal Ash Management Act to characterize discharges".

  Response: The Division used all available data in conducting the RPAs. In some cases, such as some seeps, only a single sample was available. The RPA methodology yields conservatively protective results when data are few in number. In addition, the staff used "worst case" assumptions for discharge flows, again to ensure the results were protective. Monitoring required under the proposed permit will provide a better basis for RPAs at the next renewal.

- **Comment:** Addition of compliance boundary map and condition: "We support the additions of a compliance boundary map and related condition C.(17.) as important steps toward enforcing the 2L Rule at Buck Steam Station."

  Response: Comment noted.

- **Comment:** The permit should require more frequent monitoring of discharges from coal ash beneficiation plant.

  Response: Duke expects that the proposed beneficiation plant will generate less than 5,000 gpd from rinsing ash dust off the sealed tanker trucks used to transport ash off-site. These flows will be routed to the CTCC waste system prior to discharge. Because the beneficiation plant has not been constructed, Duke provided data from a similar operation as part of its permit application. The purpose of the one-time monitoring requirement is to collect initial results the wastestream at the Buck plant.

- **Comment:** "The Fact Sheet at page 9 refers to wastes that 'will continue to be generated in 2017.' This information should be updated to reflect current operations."

  Response: Comment noted.

  - ❖ **Action:** The date in the fact sheet has been corrected as suggested.

B. Summary of Comments from Duke Energy Carolinas (Henry A. Botkins, Jr., General Manager, Buck Combined Cycle Station) (Attachment I)

- **Comment:** Measurement Frequency – Outfall 006: The permit requires daily monitoring of pH. Duke asks that language be added allowing it to request weekly sampling if three months of daily sampling supports the reduction.

  Response: The Division has included similar provisions in other permits around the state, in similar situations.

  - **Action:** A footnote has been added to allow reduced monitoring of pH at Outfalls 001A and 006 if three months of weekly samples indicates the lesser frequency is sufficient to provide representative results.

- **Comment:** Backwash from the plant's raw water intake screen is deemed permitted under 15A NCAC 02H .0106(f). Duke suggests that including Outfall 004 in the permit is inconsistent with the rule and with other Duke permits and asks that the condition in the 2011 permit be restored.

  Response: The rule says that such backwash flows are deemed permitted "provided that no water quality standards are contravened or expected to be contravened". Thus, the current permit is inconsistent with the rule (or at least misleading) in saying that the discharge "is permitted without limitations or monitoring requirements." The intent in the draft permit was to clarify this statement.

  - **Action:** The condition remains in the permit and is modified to be similar to the previous language, with corrections.

- **Comment:** The fact sheet refers to sanitary flows at Outfalls 002 and 002A, but sanitary flows were recently routed to an approved septic tank system.

  Response: Agreed, because sanitary waste (sewage) is no longer discharged to surface waters.

  - **Action:** The permit and fact sheet have been corrected to reflect the change.

- **Comment:** Duke requests that Fecal Coliform sampling be removed from Outfall 002A condition, since sanitary wastes are now routed to a septic tank system.

  Response: Agreed, because fecal coliform are no longer a parameter of concern.

  - **Action:** The permit and fact sheet have been corrected to reflect the change.

- **Comment:** Monitoring Requirements – Outfalls 002, 001A, 006: The effluent pages for these outfalls include limits and monitoring requirements for the 126 priority pollutants. Federal rules allow monitoring to be waived if the permittee can demonstrate through calculations that these parameters are not present at detectable levels. Duke asks that the requirements be removed and this option be added.

  Response: Special Condition C.(7.) already indicates this option is available; thus, no change is necessary.

C. Summary of Comments from U.S. EPA, Region 4 (Karrie-Jo Robinson-Shell, Senior Permit Specialist) (Attachment J)

- **Comment:** EPA staff advised that issuing this permit before the SOC for non-engineered seeps would present compliance problems.

  Response: The SOC was approved by the EMC and signed by the Chair on July 12, 2018, so these concerns no longer apply.

- **Comment:** The 2014 Seep Identification Plan for the Buck facility should be referred to in the permit and attached to the permit to ensure it is enforceable.

  Response: The permit addresses only those seeps categorized as "constructed". All other seeps are governed by the SOC. Since any new seeps that are discovered will necessarily be "non-engineered", issues regarding the identification of new seeps are also the domain of the SOC and will not be addressed in this permit.

D. Additional Changes Recommended by DEQ/ DOJ Reviewers

- **Comments:** In discussions following the public hearing, DEQ and DOJ reviewers proposed changes to the permit and fact sheet regarding the application of CWA Section 316(a) and 316(b) requirements (thermal variances and cooling water intake structure requirements, respectively).

  - **Action:** The 316(a) requirements have been revised to (1) clarify that a mixing zone study is required and a request for continuation of the 316(a) variance is optional, and (2) require that these be submitted no later than 3½ years after permit issuance (rather than at application for renewal, as drafted).

    The 316(b) requirements have been revised to (1) clarify that Duke's Best Technology Available (BTA) measures are tentatively approved, pending submittal and acceptance of additional information required under 122.21(r) to confirm that the facility's performance satisfies BTA standards; and (2) specify that this submittal is also due 3½ years after permit issuance. (Also note the Action on page 10.)

IV. Recommendations for Action

Based on my review of the public comments received and discussions with NPDES staff, DEQ, and DOJ, I recommend that the Director issue the final wastewater permit for the Buck facility with the revisions identified in the Response to Comments. Copies of the permit and fact sheet in Attachments B and C highlight these revisions, and original copies of the final permit and cover letter are attached to this package for your signature.

If you have any questions, please contact me to discuss.

Attachments

A. Public Notice of Hearing
B. Revisions to Permit NC0004774
C. Revisions to Fact Sheet for Permit NC0004774
D. Attendance Sign-In Sheet
E. Hearing Officer Presentation
F. Staff Presentation – Wastewater Permit
G. Speakers' Sign-In Sheet
H. Comments – SELC, et al. (speaker's notes; letter)
I. Comments – Duke Energy Carolinas
J. Comments – EPA Region 4, NPDES Permits Section

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

PERMIT

TO DISCHARGE WASTEWATER UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Duke Energy Carolinas, LLC

is hereby authorized to discharge wastewater from a facility located at the

Buck Combined Cycle Station
1385 Dukeville Road
Salisbury
Rowan County

to receiving waters designated as the Yadkin River (upper High Rock Lake) in the Yadkin-Pee Dee River Basin

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective ..... ~~*Estimated: September*~~November 1, 2018.

This permit and authorization to discharge shall expire at midnight on .....~~*Estimated: August*~~October 31, 2023.

Signed this day ~~*Estimated: August*~~September __, 2018.

REVISIONS COPY

Linda Culpepper, Interim Director
Division of Water Resources
By Authority of the Environmental Management Commission

SUPPLEMENT TO PERMIT COVER SHEET

All previous NPDES Permits issued to this facility, whether for operation or discharge are hereby revoked. As of this permit issuance, any previously issued permit bearing this number is no longer effective. Therefore, the exclusive authority to operate and discharge from this facility arises under the permit conditions, requirements, terms, and provisions included herein.

Duke Energy Carolinas, LLC

is hereby authorized to:

1. Continue the following activities at the Buck Combined Cycle Station, comprising the former Buck Steam Station (BSS), the Combustion Turbine Combined Cycle (CTCC) Plant, a Coal Ash Beneficiation Plant (proposed), and associated facilities, located at 1385 Dukeville Road in Salisbury, Rowan County:
   - Convey wastewaters generated at the facility to the Buck ash basin system, including water treatment wastes, stormwater, and contaminated groundwater seepage from the BSS and low volume wastes, cooling tower blowdown, water treatment wastes, and stormwater from the CTCC Plant; and
   - Discharge treated wastewater from the ash basin system through Outfall 002, Yard Sump emergency overflows through Outfall 002A, and filter screenings from the raw water intake through Outfall 004 to the Yadkin River (upper High Rock Lake), classified as WS-V waters in the Yadkin-Pee Dee River Basin, at the locations shown on the attached map; and

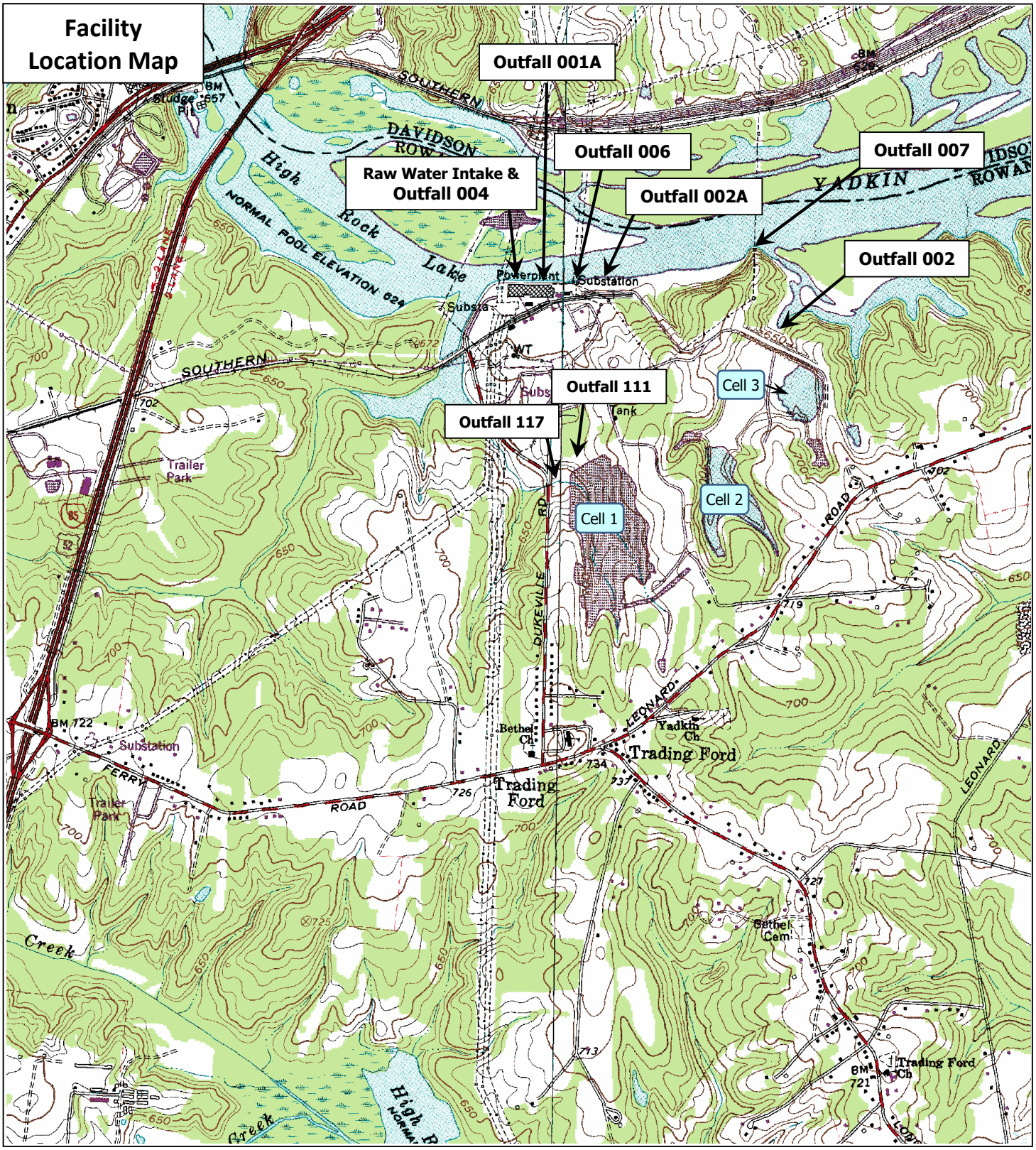
2. Upon elimination of all BSS wastewaters, discharge wastewaters from the CTCC and Coal Ash Beneficiation Plants at Outfall 001A (formerly Outfall 001) or at a new Outfall 006 (proposed) to the Yadkin River at the locations shown on the attached map; and

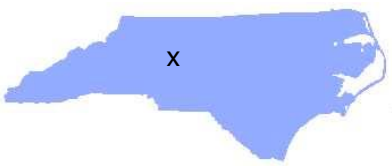
3. Upon diversion of the CTCC discharge to Outfalls 001A or 006, discharge treated ash basin decanting and dewatering wastes at Outfall 002 or at a new Outfall 007 (proposed) to the Yadkin River at the locations shown on the attached map; and

4. Discharge flows from constructed seeps at Outfalls 111 and 117 to an unnamed tributary to the Yadkin River at the location shown on the attached map; and

5. Install an emergency overflow spillway at the ash settling pond in accordance with good engineering practice and all applicable dam safety and other requirements and approvals.

Facility Location Map





USGS Quad #: E17NW, E17NE
Lat. 35.70716º Long. -80.37515º

N

SCALE
1:24,000
(1" = 2000')

Duke Energy – Buck Steam Station
NC0004774

County:	Rowan
Receiving Stream:	Yadkin River (High Rock Lake)
Stream Classification:	WS-V
River Basin:	Yadkin-Pee Dee
Sub-Basin/ 8-Digit HUC #:	03-07-06 / 03040102

Contents

PART I - MONITORING, CONTROLS, AND LIMITATIONS FOR PERMITTED DISCHARGES

SECTION A - STEAM ELECTRIC AND COAL ASH BENEFICIATION OPERATIONS

A.(1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002 – BSS + CTCC Operations)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning on the effective date of the permit and lasting until elimination of all remaining Buck Steam Station (BSS) waste flows or until permit expiration, whichever is first, the Permittee is authorized to discharge treated wastes, as described herein, from the ash settling pond through Outfall 002. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD			Weekly	Pump Logs or similar readings	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Weekly	Grab	Effluent
Total Nitrogen, mg/L [2]			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Suspended Solids	23.0 mg/L	74.0 mg/L	Quarterly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Quarterly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Quarterly	Grab	Effluent
Total Arsenic [3]	10.0 µg/L (effective ~~[>6 mos.]~~5/1/2019)	340 ug/L	Quarterly	Grab	Effluent
Total Selenium, µg/L [3]			Quarterly	Grab	Effluent
Total Mercury, ng/L [3]			Quarterly	Grab	Effluent
Total Antimony [3]	5.6 µg/L (effective ~~[>6 mos.]~~5/1/2019)	5.6 µg/L	Quarterly	Grab	Effluent
Total Chromium [3,4]	200 µg/L	200 µg/L	Quarterly	Grab	Effluent
Trivalent Chromium [3]	118 µg/L (effective ~~[>6 mos.]~~5/1/2019)	905 µg/L	Quarterly	Calculated	Effluent
Hexavalent Chromium [3]	11.0 µg/L (effective ~~[>6 mos.]~~5/1/2019)	16.0 µg/L	Quarterly	Grab	Effluent
Total Copper [3]	7.9 µg/L ~~(~~effective ~~[>6 mos.]~~5/1/2019)	10.5 µg/L	Quarterly	Grab	Effluent
Total Nickel [3]	25.0 µg/L (effective ~~[>6 mos.]~~5/1/2019)	335 µg/L	Quarterly	Grab	Effluent
Total Zinc [3,4]	126 µg/L (effective ~~[>6 mos.]~~5/1/2019)	126 µg/L	Quarterly	Grab	Effluent
Chronic Toxicity [5]	P/F @ 0.7% (eff. ~~[1st 6 mos.]~~thru 4/30/2019) P/F @ 90% (effective ~~[>6 mos.]~~5/1/2019)		Quarterly	Grab	Effluent
The 126 priority pollutants except Total Chromium and Total Zinc [3,4]	No detectable amount		Annually	Grab	Effluent

Footnotes: ~~*Red text reflects compliance schedule. Final permit will specify actual expiration and effective dates.*~~

1. Effluent sampling shall be conducted at the discharge from the ash settling pond prior to mixing with any other waste streams.
2. Total Nitrogen = NO_2-N + NO_3-N + TKN
3. See Special Condition C.(6.) Metals Analysis.

(Footnotes continue on next page.)

A.(1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

4. See Special Condition C.(7.) Priority Pollutant Limitations and Analysis.
5. See Special Condition C.(8.) Chronic Toxicity Permit Limit.

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b. The following are authorized waste flows and shall pass through the ash settling pond prior to discharge:
   i. CTCC Plant Wastewater Sump: potable, service, and process water treatment wastes; floor drain wastes; cooling tower blowdown; ~~and~~ heat recovery steam generator (HRSG) and auxiliary boiler blowdowns; and stormwater flows draining to the sump; and
   ii. BSS Yard Sump: sanitary (water treatment) wastes ~~and~~, groundwater seepage into powerhouse structure, and stormwater from the BSS site; except that stormwater from either source shall not be discharged to the ash ponds on or after December 31, 2018.

c. There shall be no discharge of metal cleaning waste or chemical metal cleaning waste.

d. There shall be no discharge of floating solids or visible foam in other than trace amounts.

e. The Permittee shall notify the Division in writing no later than seven calendar days prior to elimination of all remaining BSS waste flows and closure of the BSS Yard Sump; see Special Condition C.(2.) Notifications and Submittals.

f. The Permittee shall notify the Division in writing no later than seven calendar days prior to diversion of the waste flows to Outfall 001A or 006; see Special Condition C.(2.) Notifications and Submittals.

A.(2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002 – CTCC Operations)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning upon elimination of all remaining waste flows from the Buck Steam Station and lasting until diversion of all CTCC Plant waste flows to Outfall 001A or 006 or until permit expiration, whichever is first, the Permittee is authorized to discharge treated wastewaters, as described herein, from Outfall 002. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD			Weekly	Pump Logs or similar readings	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Weekly	Grab	Effluent
Total Nitrogen, mg/L [2]			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Suspended Solids	23.0 mg/L	74.0 mg/L	Monthly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Monthly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Monthly	Grab	Effluent
Total Arsenic, µg/L [3]			Monthly	Grab	Effluent
Total Selenium, µg/L [3]			Monthly	Grab	Effluent
Total Mercury [3,4]	12.0 ng/L (annual average) (effective ~~[>6 mos.]~~5/1/2019)		Monthly	Grab	Effluent
Total Aluminum [3]	6.5 mg/L (effective ~~[>6 mos.]~~5/1/2019)	6.5 mg/L	Monthly	Grab	Effluent
Total Antimony [3]	5.6 µg/L (effective ~~[>6 mos.]~~5/1/2019)	5.6 µg/L	Monthly	Grab	Effluent
Total Chromium [3,5]	200 µg/L	200 µg/L	Monthly	Grab	Effluent
Trivalent Chromium	118 µg/L (effective ~~[>6 mos.]~~5/1/2019)	905 µg/L	Monthly	Calculated	Effluent
Hexavalent Chromium [3]	11.0 µg/L (effective ~~[>6 mos.]~~5/1/2019)	16.0 µg/L	Monthly	Grab	Effluent
Total Copper [3]	7.9 µg/L (effective ~~[>6 mos.]~~5/1/2019)	10.5 µg/L	Monthly	Grab	Effluent
Total Nickel [3]	25.0 µg/L (effective ~~[>6 mos.]~~5/1/2019)	335 µg/L	Monthly	Grab	Effluent
Total Zinc [3,5]	126 µg/L (effective ~~[>6 mos.]~~5/1/2019)	126 µg/L	Monthly	Grab	Effluent
Total Fluoride	1.8 mg/L (effective ~~[>6 mos.]~~5/1/2019)	1.8 mg/L	Monthly	Grab	Effluent
Chloroform, µg/L [6]			Quarterly	Grab	Effluent
Chronic Toxicity [7]	P/F @ 0.7% (eff. ~~[1st 6 mos.]~~thru 4/30/2019) P/F @ 90% (effective ~~[>6 mos.]~~5/1/2019)		Quarterly	Grab	Effluent
The 126 priority pollutants except Total Chromium and Total Zinc [3,5]	No detectable amount		Annually	Grab	Effluent

Footnotes: ~~*Final permit will specify the expiration and effective dates for these limits.*~~

1. Effluent sampling shall be conducted at the discharge from the ash settling pond prior to mixing with any other waste streams.

(Footnotes continue on next page.)

A.(2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

2. Total Nitrogen = NO_2-N + NO_3-N + TKN
3. See Special Condition C.(6.) Metals Analyses.
4. Total Mercury: Annual average shall be calculated on calendar year basis.
5. See Special Condition C.(7.) Priority Pollutant Limitations and Analysis.
6. See paragraph (f) of this condition.
7. See Special Condition C.(8.) Chronic Toxicity Permit Limit.

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b. The following are authorized waste flows from the CTCC Plant ~~are~~and shall pass through the ash settling ponds prior to discharge: potable, service, and process water treatment wastes; floor drain wastes; cooling tower blowdown; ~~and~~ heat recovery steam generator (HRSG) and auxiliary boiler blowdowns~~. All such waste~~; and stormwater flows ~~shall pass through the ash settling pond prior to discharge~~draining to the sump;
except that stormwater shall not be discharged to the ponds on or after December 31, 2018.

c. There shall be no discharge of metal cleaning waste or chemical metal cleaning waste.

d. There shall be no discharge of floating solids or visible foam in other than trace amounts.

e. No later than 180 days after this special condition becomes effective, the Permittee shall analyze at least one representative sample of the CTCC Plant Wastewater Sump discharge and submit a complete and accurate EPA Application Form 2C for the discharge. If the discharge becomes subject to Special Conditions A.(3.) or A.(4.) before this requirement is satisfied, the requirement and the original 180-day compliance date remain in effect; see conditions A.(3.) (f) and A.(4.) (f).

f. The initial chloroform analysis shall be conducted no later than 180 days after this condition becomes effective. If the initial analysis does not yield a reportable concentration of chloroform (PQL $\leq$ 2.0 µg/L), the chloroform monitoring specified in paragraph (a) is waived for the remainder of the permit term.

g. The Permittee shall notify the Division in writing no later than seven calendar days prior to diversion of CTCC Plant flows to Outfall 001A or 006; see Special Condition C.(2.) Notifications and Submittals.

A.(3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001A – CTCC Operations)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning upon both elimination of all remaining waste flows from the Buck Steam Station and diversion of CTCC Plant flows to Outfall 001A and lasting until diversion of CTCC Plant flows to Outfall 006 or until permit expiration, whichever is first, the Permittee is authorized to discharge wastewaters, as described herein, from Outfall 001A. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD			Daily	Pump logs or similar readings	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Daily[2]	Grab	Effluent
Temperature	35°C (95°F)		Daily	Grab	Effluent
Temperature [2~~3~~]			Daily	Grab	Intake and Effluent
Total Nitrogen, mg/L [3~~4~~]			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Suspended Solids	23.0 mg/L	74.0 mg/L	2/Month	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	2/Month	Grab	Effluent
Total Residual Chlorine [4~~5~~]		28.0 µg/L	2/Month	Grab	Effluent
Free Available Chlorine [4~~5~~]	200 µg/L	500 µg/L	2/Month	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			2/Month	Grab	Effluent
Total Arsenic, µg/L [5~~6~~]			Quarterly	Grab	Effluent
Total Selenium, µg/L [5~~6~~]			Quarterly	Grab	Effluent
Total Mercury, ng/L [5~~6~~]			Quarterly	Grab	Effluent
Total Aluminum, mg/L [5~~6~~]			Quarterly	Grab	Effluent
Total Antimony, µg/L [5~~6~~]			Quarterly	Grab	Effluent
Total Chromium [5~~,~~6,7]	200 µg/L	200 µg/L	2/Month	Grab	Effluent
Total Copper [5~~6~~]			Quarterly	Grab	Effluent
Total Nickel, µg/L [5~~6~~]			Quarterly	Grab	Effluent
Total Zinc [5~~,~~6,7]	1,000 µg/L	1,000 µg/L	2/Month	Grab	Effluent
Total Fluoride, mg/L			Quarterly	Grab	Effluent
Chloroform, µg/L [7~~8~~]			Quarterly	Grab	Effluent
Chronic Toxicity [8~~9~~]	P/F @ 0.1%		Quarterly	Grab	Effluent
The 126 priority pollutants except Total Chromium and Total Zinc [5~~,~~6,7]	No detectable amount		Annually	Grab	Effluent

Footnotes:

1. Effluent sampling shall be conducted below the final treatment unit and prior to mixing with any other waste streams. Intake means the facility's raw water intake.
2. Upon completing at least three consecutive months of daily pH readings, the Permittee may request that pH monitoring be reduced to Weekly. Such request should demonstrate to the Division's satisfaction that the results of weekly monitoring will adequately represent the measure and variability of effluent pH. If a request was approved for Outfall 001A, the approval may be extended to Outfall 006 without requiring resubmittal of the request.

(Footnotes continue on next page.)

A.(3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

~~2.~~3. The daily average temperature of the effluent shall be such as not to exceed 10°C (50°F) if the daily average intake temperature is below 2.5°C (36.5°F), and shall not exceed two times the intake temperature (°F) minus 23 if the daily average intake temperature ranges from 2.5°C (36.5°F) to 12.8°C (55°F) when only units with the same control system are operating. See also paragraphs (h) and (i) of this condition.

~~3.~~4. Total Nitrogen = NO_2-N + NO_3-N + TKN

~~4.~~5. The Division shall consider all effluent TRC values reported below 50 µg/L to be in compliance with the permit. However, the permittee shall continue to record and submit all values reported by a North Carolina certified laboratory (including field certified), even if these values fall below 50 µg/L. Neither free available chlorine (FAC) nor TRC may be discharged from any single generating unit for more than two hours in any single day, and not more than one unit in the plant may discharge FAC or TRC, unless the discharger demonstrates to the Division that the unit(s) cannot operate at or below this level of chlorination.

~~5.~~6. See Special Condition C.(6.) Metals Analyses.

~~6.~~7. See Special Condition C.(7.) Priority Pollutant Limitations and Analysis.

~~7.~~8. See paragraph (g) of this condition.

~~8.~~9. See Special Condition C.(8.) Chronic Toxicity Permit Limit.

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b. Authorized waste flows from the CTCC Plant are potable, service, and process water treatment wastes; floor drain wastes; cooling tower blowdown; ~~and~~ heat recovery steam generator (HRSG) and auxiliary boiler blowdowns; and stormwater flows draining to the sump. Such waste flows shall not pass through the ash settling pond prior to discharge.

c. There shall be no discharge of metal cleaning waste or chemical metal cleaning waste.

d. There shall be no discharge of floating solids or visible foam in other than trace amounts.

e. This condition is not intended to authorize concurrent waste discharges through both Outfalls 001A and 006 except to the extent necessary to make an orderly transition to the newer outfall. The Permittee shall cease discharge at Outfall 001A as soon as practical after bringing Outfall 006 online.

f. Unless it has already done so in accordance with Special Condition A.(2.) (e), the Permittee shall analyze a representative sample of the CTCC Plant Wastewater Sump discharge and submit a complete and accurate EPA Application Form 2C for the sump discharge no later than the date established per Condition A.(2.) (e).

g. If chloroform monitoring was waived in accordance with conditions A.(2.) (a) and (f), the monitoring requirement specified in paragraph (a) of this condition is waived for the remainder of the permit term. If the initial chloroform analysis is conducted while this condition is effective, and if the initial analysis does not yield a reportable concentration of chloroform (PQL $\leq$ 2.0 µg/L), chloroform monitoring specified in paragraph (a) of this condition is waived for the remainder of the permit term.

h. The mixing zone for thermal discharges from the Buck facility is defined as that portion of the Yadkin River (High Rock Lake) extending from the Buck Combined Cycle Station water intake to High Rock Lake Dam. The thermal variance and mixing zone terminate on expiration of this permit. The Director may reopen the permit to extend or modify the variance based on the findings of the Thermal Mixing Zone Study (see Special Condition C.(13.)) or other new information.

i. When High Rock Lake, as measured at the intake of the Buck Combined Cycle Station, is drawn down 10 feet or greater, the Permittee shall on a daily average basis ensure that the minimum unheated daily average stream flow does not fall below one third of the 7-day 10-year low flow (7Q10).

j. The Permittee shall notify the Division in writing no later than seven calendar days prior to diversion of CTCC Plant flows to Outfall 006; see Special Condition C.(2.) Notifications and Submittals.

A.(4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 006 – CTCC Operations)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning upon both elimination of all remaining waste flows from the Buck Steam Station and diversion of CTCC Plant flows to Outfall 006 and lasting until permit expiration, the Permittee is authorized to discharge wastewaters, as described herein, from Outfall 006. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD			Daily	Pump logs or similar readings	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Daily	Grab	Effluent
Temperature	35°C (95°F)		Daily	Grab	Effluent
Temperature [2,3]			Daily	Grab	Intake and Effluent
Total Nitrogen, mg/L [3,4]			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Suspended Solids	23.0 mg/L	74.0 mg/L	2/Month	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	2/Month	Grab	Effluent
Total Residual Chlorine [4,5]		28.0 µg/L	2/Month	Grab	Effluent
Free Available Chlorine [4,5]	200 µg/L	500 µg/L	2/Month	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			2/Month	Grab	Effluent
Total Arsenic, µg/L [5,6]			Quarterly	Grab	Effluent
Total Selenium, µg/L [5,6]			Quarterly	Grab	Effluent
Total Mercury, ng/L [5,6]			Quarterly	Grab	Effluent
Total Aluminum, mg/L [5,6]			Quarterly	Grab	Effluent
Total Antimony, µg/L [5,6]			Quarterly	Grab	Effluent
Total Chromium [5,6,7]	200 µg/L	200 µg/L	2/Month	Grab	Effluent
Total Copper~~, µg/L~~ [5] [6]			Quarterly	Grab	Effluent
Total Nickel, µg/L [5,6]			Quarterly	Grab	Effluent
Total Zinc [5,6,7]	1,000 µg/L	1,000 µg/L	2/Month	Grab	Effluent
Total Fluoride, mg/L			Quarterly	Grab	Effluent
Chloroform, µg/L [7,8]			Quarterly	Grab	Effluent
Chronic Toxicity [8,9]	P/F @ 0.1%		Quarterly	Grab	Effluent
The 126 priority pollutants except Total Chromium and Total Zinc [5,6,7]	No detectable amount		Annually	Grab	Effluent

Footnotes:

1. Effluent sampling shall be conducted below the final treatment unit and prior to mixing with any other waste streams. Intake means the facility's raw water intake.
2. Upon completing at least three consecutive months of daily pH readings, the Permittee may request that pH monitoring be reduced to Weekly. Such request should demonstrate to the Division's satisfaction that the results of weekly monitoring will adequately represent the measure and variability of effluent pH. If a request was approved for Outfall 001A, the approval may be extended to Outfall 006 without requiring resubmittal of the request.

(Footnotes continue on next page.)

A.(4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

~~2.~~3. The daily average temperature of the effluent shall be such as not to exceed 10°C (50°F) if the daily average intake temperature is below 2.5°C (36.5°F), and shall not exceed two times the intake temperature (°F) minus 23 if the daily average intake temperature ranges from 2.5°C (36.5°F) to 12.8°C (55°F) when only units with the same control system are operating. See also paragraphs (h) and (i) of this condition.

~~3.~~4. Total Nitrogen = NO_2-N + NO_3-N + TKN

~~4.~~5. The Division shall consider all effluent TRC values reported below 50 µg/L to be in compliance with the permit. However, the permittee shall continue to record and submit all values reported by a North Carolina certified laboratory (including field certified), even if these values fall below 50 µg/L. Neither free available chlorine (FAC) nor TRC may be discharged from any single generating unit for more than two hours in any single day, and not more than one unit in the plant may discharge FAC or TRC, unless the discharger demonstrates to the Division that the unit(s) cannot operate at or below this level of chlorination.

~~5.~~6. See Special Condition C.(6.) Metals Analyses.

~~6.~~7. See Special Condition C.(7.) Priority Pollutant Limitations and Analysis.

~~7.~~8. See paragraph (g) of this condition.

~~8.~~9. See Special Condition C.(8.) Chronic Toxicity Permit Limit.

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b. Authorized waste flows from the CTCC Plant are potable, service, and process water treatment wastes; floor drain wastes; cooling tower blowdown; ~~and~~ heat recovery steam generator (HRSG) and auxiliary boiler blowdowns; and stormwater flows draining to the sump. Such waste flows shall not pass through the ash settling pond prior to discharge.

c. There shall be no discharge of metal cleaning waste or chemical metal cleaning waste.

d. There shall be no discharge of floating solids or visible foam in other than trace amounts.

e. Conditions A.(3.) and A.(4.) are not intended to authorize concurrent waste discharges through both Outfalls 001A and 006 except as necessary to make an orderly transition to the new outfall. The Permittee shall cease discharge at Outfall 001A as soon as practical after bringing Outfall 006 online.

f. Unless it has already done so in accordance with Special Condition A.(2.) (e) or A.(3.) (f), the Permittee shall analyze a representative sample of the CTCC Plant Wastewater Sump discharge and submit a complete and accurate EPA Application Form 2C for the sump discharge no later than the date established in condition A.(2.)(e).

g. If chloroform monitoring was waived in accordance with conditions A.(2.) a) and (f) or conditions A.(4.)(a) and (g), the monitoring requirement specified in paragraph (a) of this condition is waived for the remainder of the permit term. If the initial chloroform analysis is conducted while this condition is effective, and if the initial analysis does not yield a reportable concentration of chloroform (PQL ≤ 2.0 µg/L), chloroform monitoring specified in paragraph (a) is waived for the remainder of the permit term.

h. The mixing zone for thermal discharges from the Buck facility is defined as that portion of the Yadkin River (High Rock Lake) extending from the Buck Combined Cycle Station water intake to High Rock Lake Dam. The thermal variance and mixing zone terminate on expiration of this permit. The Director may reopen the permit to extend or modify the variance based on the findings of the Thermal Mixing Zone Study (see Special Condition C.(13.)) or other new information.

i. When High Rock Lake, as measured at the intake of the Buck Combined Cycle Station, is drawn down 10 feet or greater, the Permittee shall on a daily average basis ensure that the minimum unheated daily average stream flow does not fall below one third of the 7-day 10-year low flow (7Q10).

j. The Permittee shall notify the Division in writing no later than seven calendar days following the closure of Outfall 001A to confirm its closure; see Special Condition C.(2.) Notifications and Submittals.

A.(5.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002A)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning on the effective date of the permit and lasting until elimination of all remaining waste flows from the Buck Steam Station or until permit expiration, whichever is first, the Permittee is authorized to discharge emergency yard sump overflows from Outfall 002A. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency [1]	Sample Type	Sample Location [2]
Flow, MGD [3]			Episodic	Estimate	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Episodic	Grab	Effluent
Total Suspended Solids, mg/L	23.0 mg/L	74.0 mg/L	Episodic	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Episodic	Grab	Effluent
~~Fecal Coliform, #/100 mL~~			~~Episodic~~	~~Grab~~	~~Effluent~~

Footnotes:

1. Episodic sampling is required a minimum of once per day when sump overflows occur. All samples shall be representative of the discharge.
2. Effluent sampling shall be conducted at a point prior to discharge to the Yadkin River.
3. See Special Condition C.(10.) Flow Monitoring and Reporting regarding reporting flow when no discharge occurs.

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b. Authorized waste discharges from the BSS Yard Sump are sanitary (water treatment) wastes, incidental flows from floor drains and groundwater seepage into the powerhouse structure, all of which are generated at the BSS powerhouse; and stormwater from the existing sump drainage area~~.~~, except that stormwater shall not be discharged to the ash ponds on or after December 31, 2018.

c. There shall be no discharge of floating solids or visible foam in other than trace amounts.

d. The Permittee shall notify the Division when all waste flows to the sump are eliminated, per Condition A.(1.) (e).

~~**A.(6.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 004)**~~

A.(6.) INTAKE SCREEN BACKWASH

[15A NCAC ~~02B .0400 *et seq.*, 02B .0500 *et seq.*, 15A NCAC~~ 02H .0106(f)(2)]

~~a. The release of screenings~~Backwash from the Buck raw water intake screens is deemed permitted ~~so long as the release does not contravene~~provided that no water quality standards are contravened or expected to be contravened.

~~The Permittee shall monitor the water quality impact of such releases at least once per quarter. If the release is found to contravene water quality standards, the Permittee shall note same on the appropriate DMR form.~~

A.(7.) MONITORING REQUIREMENTS (Internal Outfall 008 – Coal Ash Beneficiation Plant)
[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. No later than 180 days after startup of the Coal Ash Beneficiation Plant, the Permittee shall monitor the waste flows discharged to the CTCC wastewater system as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD [2]			Daily (first year)	Pump logs, similar readings, or estimate	Effluent
pH, S.U.			Once	Grab	Effluent
Total Suspended Solids, mg/L			Once	Grab	Effluent
Oil and Grease, mg/L			Once	Grab	Effluent
Total Dissolved Solids, mg/L			Once	Grab	Effluent
Chlorides, mg/L			Once	Grab	Effluent
Sulfates, mg/L			Once	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Once	Grab	Effluent
Total Arsenic, µg/L [3]			Once	Grab	Effluent
Total Selenium, µg/L [3]			Once	Grab	Effluent
Total Copper, µg/L [3]			Once	Grab	Effluent
Total Lead, µg/L [3]			Once	Grab	Effluent
Total Nickel, µg/L [3]			Once	Grab	Effluent
Total Thallium, µg/L [3]			Once	Grab	Effluent
Total Zinc, µg/L [3]			Once	Grab	Effluent

Footnotes:

1. Samples shall be collected at a point downstream of the final Beneficiation Plant treatment unit and prior to comingling with any other waste streams. Samples shall be representative of the waste flow from the plant.
2. See Special Condition C.(10.) Flow Monitoring and Reporting.
3. See Special Condition C.(6.) Metals Analyses.

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b. The Permittee shall report the monitoring results on the appropriate DMR.

c. The Permittee shall notify the Division in writing no later than seven calendar days prior to start-up of the Beneficiation Plant; see Special Condition C.(2.) Notifications and Submittals.

SECTION B - ASH BASIN REMEDIATION AND CONSTRUCTED SEEP DISCHARGES

B.(1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002 – Ash Pond Decanting)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning with the elimination of all BSS waste flows and diversion of CTCC Plant flows to Outfall 001A or 006 and lasting until commencement of ash basin dewatering, diversion of decant discharges to Outfall 007, or permit expiration, whichever is first, the Permittee is authorized to discharge decant water from Outfall 002 (decanting the free water above the settled ash layer that does not involve mechanical disturbance of the ash). Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD			Weekly	Pump Logs or similar readings	Effluent
pH [2]	≥ 6.0 and ≤ 9.0 standard units		Weekly	Grab	Effluent
Total Nitrogen, mg/L [3]			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Suspended Solids [4]	23.0 mg/L	74.0 mg/L	Monthly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Monthly	Grab	Effluent
Total Dissolved Solids	500 mg/L	500 mg/L	Monthly	Grab	Effluent
Turbidity, NTU [5]			Monthly	Grab	Effluent
Chlorides	250 mg/L	250 mg/L	Monthly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Monthly	Grab	Effluent
Total Arsenic [6]	10.0 µg/L	340 µg/L	Weekly	Grab	Effluent
Total Selenium [6]	5.0 µg/L	56.0 µg/L	~~Monthly~~Weekly	Grab	Effluent
Total Mercury, ng/L [6]			~~Monthly~~Weekly	Grab	Effluent
Total Antimony [6]	5.6 µg/L	5.6 µg/L	Monthly	Grab	Effluent
Total Copper [6]	7.9 µg/L	10.5 µg/L	Monthly	Grab	Effluent
Total Chromium, ug/L [6]			Monthly	Grab	Effluent
Hexavalent Chromium, ug/L [6]			Monthly	Grab	Effluent
Trivalent Chromium, ug/L [6]			Monthly	Grab	Effluent
Total Lead [6]	2.9 µg/L	75.0 µg/L	Monthly	Grab	Effluent
Total Nickel [6]	25.0 µg/L	335 µg/L	Monthly	Grab	Effluent
Total Thallium, µg/L [6]			Monthly	Grab	Effluent
Chronic Toxicity [7]	P/F at 90%		Quarterly	Grab	Effluent

Footnotes:

1. Effluent sampling shall be conducted at the discharge from the ash settling pond or, if additional treatment is provided, below the final treatment unit, and prior to mixing with any other waste streams.
2. The Permittee shall continuously monitor pH when the decanting process commences (and one or more pumps are operating), and the decanting pump(s) shall be shut off immediately when the 15-minute running average pH falls below 6.1 or rises above 8.9 S.U. Pumping will be allowed to continue if interruption might result in dam failure or damage.
3. Total Nitrogen = NO_2-N + NO_3-N + TKN
4. The Permittee shall continuously monitor TSS concentration when the decanting process commences (and one or more pumps is operating), and the decanting pump(s) shall be shut off automatically when the 15-minute running average TSS exceeds one half of the Daily Maximum TSS limit. Pumping will be allowed to continue if interruption might result in dam failure or damage.

(Footnotes continue on next page.)

B.(1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

5. The discharge from this facility shall not cause turbidity in the receiving stream to exceed ~~50~~25 NTU. If the instream turbidity exceeds ~~50~~25 NTU due to natural background conditions, the discharge shall not cause turbidity to increase in the receiving stream. Therefore, if the effluent turbidity exceeds ~~50~~25 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to determine whether the turbidity level in the receiving waterbody was increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)).
6. See Special Condition C.(6.) Metals Analyses.
7. See Special Condition C.(7.) Chronic Toxicity Permit Limit.

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b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

c. The Permittee shall notify the Division of Water Resources, in writing, no later than seven calendar days prior to commencement of decanting; see Special Condition C.(2.) Notifications and Submittals.

~~d. When the Permittee commences ash pond decanting/dewatering, it shall treat the wastewater discharged from the ash pond(s) using physical-chemical treatment, if necessary, to ensure state Water Quality Standards are not contravened in the receiving stream. The Permittee shall notify the Division of Water Resources, in writing, within seven calendar days of installing additional physical-chemical treatment at this outfall; see Special Condition C.(2.) Notifications and Submittals.~~

d. If any one of these pollutants (As, Se, Hg, Sb, Cu, Pb, Ni, and Tl) reaches 85% of the allowable monthly average effluent discharge concentration during decanting, the Permittee shall immediately discontinue discharge of the wastewater and report the event to DWR Mooresville Regional Office and Complex NPDES Permitting via telephone and e-mail.

85% of Allowable Monthly Average Effluent Concentrations							
As	Se	Hg	Sb	Cu	Pb	Ni	Tl
8.5 µg/L	4.3 µg/L	10.2 ng/L	4.8 µg/L	6.7 µg/L	2.5 µg/L	21.3 µg/L	0.34 µg/L

e. The facility is allowed to draw down the wastewater in the ash pond to no less than three feet above the ash. The rate for lowering the liquid level in a coal ash pond shall not exceed one (1) foot per day unless a higher rate is supported to the satisfaction of DEMLR and in accordance with NCAC, Title 15A, Subchapter 2K. The facility shall use a floating pump suction pipe with free water skimmed from the basin surface using an adjustable weir. See also paragraph (a), Footnotes 2 and 4, above.

f. The limits and conditions for the discharge of dewatering waters shall apply when water in the ash settling basin is lowered below the three feet trigger mark.

g. The Permittee shall notify the Division of Water Resources in writing no later than seven calendar days prior to diversion of ash pond discharges to Outfall 007; see Special Condition C.(2.) Notifications and Submittals. Conditions B.(1.) through B.(4.) are not intended to authorize concurrent waste discharges through both Outfalls 002 and 007 except as necessary to make an orderly transition to the new outfall. The Permittee shall cease discharge at Outfall 002 as soon as practical after Outfall 007 is operational.

h. The Permittee shall notify the Division of Water Resources in writing no later than seven calendar days prior to commencement of ash dewatering; see Special Condition C.(2.) Notifications and Submittals.

B.(2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002 – Ash Pond Dewatering)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning with the start of ash pond dewatering and lasting until diversion of dewatering discharges to Outfall 007 or permit expiration, whichever is first, the Permittee is authorized to discharge treated ash dewatering waste flows from Outfall 002. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow, MGD			Daily	Pump Logs or similar readings	Effluent
pH [2]	≥ 6.0 and ≤ 9.0 standard units		Daily	Grab	Effluent
Total Nitrogen, mg/L [3]			Weekly	Grab	Effluent
Total Phosphorus, mg/L			Weekly	Grab	Effluent
Total Suspended Solids [4]	23.0 mg/L	74.0 mg/L	Weekly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Weekly	Grab	Effluent
Total Dissolved Solids	500 mg/L	500 mg/L	Weekly	Grab	Effluent
Turbidity, NTU [5]			Weekly	Grab	Effluent
Chlorides	250 mg/L	250 mg/L	Weekly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Weekly	Grab	Effluent
Total Arsenic [6]	10.0 µg/L	340 µg/L	Weekly	Grab	Effluent
Total Selenium [6]	5.0 µg/L	56 µg/L	Weekly	Grab	Effluent
Total Mercury, ng/L [6]			Weekly	Weekly	Effluent
Total Antimony [6]	5.6 µg/L	5.6 µg/L	Weekly	Grab	Effluent
Total Copper [6]	7.9 µg/L	10.5 µg/L	Weekly	Grab	Effluent
Total Chromium, ug/L [6]			Weekly	Grab	Effluent
Hexavalent Chromium, ug/L [6]			Weekly	Grab	Effluent
Trivalent Chromium, ug/L [6]			Weekly	Grab	Effluent
Total Lead [6]	2.9 µg/L	75 µg/L	Weekly	Grab	Effluent
Total Nickel [6]	25 µg/L	335 µg/L	Weekly	Grab	Effluent
Total Thallium [6]	2.0 µg/L	2.0 µg/L	Weekly	Grab	Effluent
Chronic Toxicity [7]	P/F @ 90%		Monthly	Grab	Effluent

Footnotes:

1. Effluent sampling shall be conducted at the discharge from the ash settling pond or, if additional treatment is provided, below the final treatment unit, and prior to mixing with any other waste streams.
2. The Permittee shall continuously monitor pH when the dewatering process commences (and one or more pumps is operating), and the dewatering pump(s) shall be shut off immediately when the 15-minute running average pH falls below 6.1 or rises above 8.9 S.U. Pumping will be allowed to continue if interruption might result in dam failure or damage.
3. Total Nitrogen = NO_2-N + NO_3-N + TKN
4. The Permittee shall continuously monitor TSS concentration when the dewatering process commences (and one or more pumps is operating), and the dewatering pump(s) shall be shut off automatically when the 15-minute running average TSS exceeds one half of the Daily Maximum TSS limit. Pumping will be allowed to continue if interruption might result in dam failure or damage.

(Footnotes continue on next page.)

B.(2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

5. The discharge from this facility shall not cause turbidity in the receiving stream to exceed ~~50~~25 NTU. If the instream turbidity exceeds ~~50~~25 NTU due to natural background conditions, the discharge shall not cause turbidity to increase in the receiving stream. Therefore, if the effluent turbidity exceeds ~~50~~25 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to determine whether the turbidity level in the receiving waterbody was increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)).
6. See Special Condition C.(6.) Metals Analyses.
7. See Special Condition C.(7.) Chronic Toxicity Permit Limit.

---

b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

~~c. When the Permittee commences ash pond decanting/dewatering, it shall treat the wastewater discharged from the ash pond(s) using physical-chemical treatment, if necessary, to ensure state Water Quality Standards are not contravened in the receiving stream. The Permittee shall notify the Division of Water Resources, in writing, within seven calendar days of installing additional physical-chemical treatment at this outfall; see Special Condition C.(2.) Notifications and Submittals.~~

c. If any one of these pollutants (As, Se, Hg, Sb, Cu, Pb, Ni, and Tl) reaches 85% of the allowable monthly average effluent discharge concentration during dewatering, the Permittee shall immediately discontinue discharge of the wastewater and report the event to DWR Mooresville Regional Office and Complex NPDES Permitting via telephone and e-mail.

85% of Allowable Monthly Average Effluent Concentrations							
As	Se	Hg	Sb	Cu	Pb	Ni	Tl
8.5 µg/L	4.3 µg/L	10.2 ng/L	4.8 µg/L	6.7 µg/L	2.5 µg/L	21.3 µg/L	1.7 µg/L

d. In the event that additional waters accumulate in the pond(s), the rate for lowering the liquid level in a coal ash pond shall not exceed one (1) foot per day unless a higher rate is supported to the satisfaction of DEMLR and in accordance with NCAC, Title 15A, Subchapter 2K. The facility shall use a floating pump suction pipe with free water skimmed from the basin surface using an adjustable weir. See also paragraph (a), Footnotes 2 and 4, above.

e. The Permittee shall notify the Division of Water Resources in writing no later than seven calendar days prior to diversion of dewatering discharges to Outfall 007; see Special Condition C.(2.) Notifications and Submittals. Conditions B.(1.) through B.(4.) are not intended to authorize concurrent waste discharges through both Outfalls 002 and 007 except as necessary to make an orderly transition to the new outfall. The Permittee shall cease discharge at Outfall 002 as soon as practical after Outfall 007 is operational.

B.(3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 007 – Ash Pond Decanting)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning with the elimination of all BSS waste flows, diversion of CTCC Plant flows to Outfall 001A or 006, and diversion of ash pond discharges to Outfall 007 and lasting until commencement of ash basin dewatering or permit expiration, whichever is first, the Permittee is authorized to discharge decant water from Outfall 007 (decanting the free water above the settled ash layer that does not involve mechanical disturbance of the ash). Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location [1]
Flow~~, MGD~~	1.73 MGD		Weekly	Pump Logs or similar readings	Effluent
pH [2]	≥ 6.0 and ≤ 9.0 standard units		Weekly	Grab	Effluent
Total Nitrogen, mg/L [4]			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Suspended Solids [4]	23.0 mg/L	74.0 mg/L	Monthly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Monthly	Grab	Effluent
Total Dissolved Solids, mg/L			Monthly	Grab	Effluent
Turbidity, NTU [5]			Monthly	Grab	Effluent
Chlorides, mg/L			Monthly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Monthly	Grab	Effluent
Total Arsenic, ug/L [6]			~~Monthly~~Weekly	Grab	Effluent
Total Selenium, ug/L [6]			~~Monthly~~Weekly	Grab	Effluent
Total Mercury, ng/L [6]			~~Monthly~~Weekly	Grab	Effluent
Total Antimony, µg/L [6]			Monthly	Grab	Effluent
Total Copper, ug/L [6]			Monthly	Grab	Effluent
Total Chromium, ug/L [6]			Monthly	Grab	Effluent
Total Lead, µg/L [6]			Monthly	Grab	Effluent
Total Nickel, µg/L [6]			Monthly	Grab	Effluent
Total Thallium, µg/L [6]			Monthly	Grab	Effluent
Chronic Toxicity [7]	P/F @ 0.3%		Quarterly	Grab	Effluent

Footnotes:

1. Effluent sampling shall be conducted at the discharge from the ash settling pond or, if additional treatment is provided, below the final treatment unit, and prior to mixing with any other waste streams.
2. The Permittee shall continuously monitor pH when the decanting process commences (and one or more pumps is operating), and the decanting pump(s) shall be shut off immediately when the 15-minute running average pH falls below 6.1 or rises above 8.9 S.U. Pumping will be allowed to continue if interruption might result in dam failure or damage.
3. Total Nitrogen = NO_2-N + NO_3-N + TKN
4. The Permittee shall continuously monitor TSS concentration when the decanting process commences (and one or more pumps is operating), and the decanting pump(s) shall be shut off automatically when the 15-minute running average TSS exceeds one half of the Daily Maximum TSS limit. Pumping will be allowed to continue if interruption might result in dam failure or damage.

(Footnotes continue on next page.)

B.(3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

Footnotes (cont.):

5. The discharge from this facility shall not cause turbidity in the receiving stream to exceed ~~50~~25 NTU. If the instream turbidity exceeds ~~50~~25 NTU due to natural background conditions, the discharge shall not cause turbidity to increase in the receiving stream. Therefore, if the effluent turbidity exceeds ~~50~~25 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to determine whether the turbidity level in the receiving waterbody was increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)).
6. See Special Condition C.(6.) Metals Analyses.
7. See Special Condition C.(7.) Chronic Toxicity Permit Limit.

---

b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

~~c. When the Permittee commences ash pond decanting/dewatering, it shall treat the wastewater discharged from the ash pond(s) using physical-chemical treatment, if necessary, to ensure state Water Quality Standards are not contravened in the receiving stream. The Permittee shall notify the Division of Water Resources, in writing, within seven calendar days of installing additional physical-chemical treatment at this outfall; see Special Condition C.(2.) Notifications and Submittals.~~

c. If any one of these pollutants (As, Se, Hg, Sb, Cu, Pb, Ni, and Tl) reaches 85% of the allowable monthly average effluent discharge concentration during decanting, the Permittee shall immediately discontinue discharge of the wastewater and report the event to DWR Mooresville Regional Office and Complex NPDES Permitting via telephone and e-mail.

85% of Allowable Monthly Average Effluent Concentrations							
As	Se	Hg	Sb	Cu	Pb	Ni	Tl
15.7 mg/L	1.6 mg/L	3.9 µg/L	1.8 mg/L	2.6 mg/L	1.0 mg/L	8.2 mg/L	0.11 mg/L

d. The facility is allowed to draw down the wastewater in the ash pond to no less than three feet above the ash. The rate for lowering the liquid level in a coal ash pond shall not exceed one (1) foot per day unless a higher rate is supported to the satisfaction of DEMLR and in accordance with NCAC, Title 15A, Subchapter 2K. The facility shall use a floating pump suction pipe with free water skimmed from the basin surface using an adjustable weir. See also paragraph (a), Footnotes 2 and 4, above.

e. The limits and conditions for the discharge from dewatering operations shall apply when water in the ash settling basin is lowered below the three feet trigger mark.

f. The Permittee shall notify the Division of Water Resources in writing no later than seven calendar days prior to commencement of ash basin dewatering; see Special Condition C.(2.) Notifications and Submittals.

g. Conditions B.(1.) through B.(4.) are not intended to authorize concurrent waste discharges through both Outfalls 002 and 007 except as necessary to make an orderly transition to the new outfall. The Permittee shall cease discharge at Outfall 002 as soon as practical after Outfall 007 is operational.

B.(4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 007 – Ash Pond Dewatering)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning with the start of ash pond dewatering and diversion of dewatering discharges to Outfall 007 and lasting until permit expiration, the Permittee is authorized to discharge treated ash dewatering waste flows from Outfall 007. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS[1]		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow~~, MGD~~	0.72 MGD		Daily	Pump Logs or similar readings	Effluent
pH [2]	≥ 6.0 and ≤ 9.0 standard units		Daily	Grab	Effluent
Total Nitrogen, mg/L [3]			Weekly	Grab	Effluent
Total Phosphorus, mg/L			Weekly	Grab	Effluent
Total Suspended Solids [4]	23.0 mg/L	74.0 mg/L	Weekly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Weekly	Grab	Effluent
Total Dissolved Solids, mg/L			Weekly	Grab	Effluent
Turbidity, NTU [5]			Weekly	Grab	Effluent
Chlorides, mg/L			Weekly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Weekly	Grab	Effluent
Total Arsenic, ug/L [6]			Weekly	Grab	Effluent
Total Selenium, ug/L [6]			Weekly	Grab	Effluent
Total Mercury, ng/L [6]			Weekly	Grab	Effluent
Total Antimony, µg/L [6]			Weekly	Grab	Effluent
Total Copper, ug/L [6]			Weekly	Grab	Effluent
Total Chromium, ug/L [6]			Weekly	Grab	Effluent
Total Lead, µg/L [6]			Weekly	Grab	Effluent
Total Nickel, µg/L [6]			Weekly	Grab	Effluent
Total Thallium, µg/L [6]			Weekly	Grab	Effluent
Chronic Toxicity [7]	P/F @ 0.1%		Monthly	Grab	Effluent

Footnotes:

1. Effluent sampling shall be conducted at the discharge from the ash settling pond or, if additional treatment is provided, below the final treatment unit, and prior to mixing with any other waste streams.
2. The Permittee shall continuously monitor pH when the dewatering process commences (and one or more pumps is operating), and the dewatering pump(s) shall be shut off immediately when the 15-minute running average pH falls below 6.1 or rises above 8.9 S.U. Pumping will be allowed to continue if interruption might result in dam failure or damage.
3. Total Nitrogen = NO_2-N + NO_3-N + TKN
4. The Permittee shall continuously monitor TSS concentration when the dewatering process commences (and one or more pumps is operating), and the dewatering pump(s) shall be shut off automatically when the 15-minute running average TSS exceeds one half of the Daily Maximum TSS limit. Pumping will be allowed to continue if interruption might result in dam failure or damage.
5. The discharge from this facility shall not cause turbidity in the receiving stream to exceed ~~50~~25 NTU. If the instream turbidity exceeds ~~50~~25 NTU due to natural background conditions, the discharge shall not cause turbidity to increase in the receiving stream. Therefore, if the effluent turbidity exceeds ~~50~~25 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to determine whether the turbidity level in the receiving waterbody was increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)).
6. See Special Condition C.(6.) Metals Analyses.
7. See Special Condition C.(7.) Chronic Toxicity Permit Limit.

B.(4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont.)

b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

~~c. When the Permittee commences ash pond decanting/dewatering, it shall treat the wastewater discharged from the ash pond(s) using physical-chemical treatment, if necessary, to ensure state Water Quality Standards are not contravened in the receiving stream. The Permittee shall notify the Division of Water Resources, in writing, within seven calendar days of installing additional physical-chemical treatment at this outfall; see Special Condition C.(2.) Notifications and Submittals.~~

c. If any one of these pollutants (As, Se, Hg, Sb, Cu, Pb, Ni, and Tl) reaches 85% of the allowable monthly average effluent discharge concentration during dewatering, the Permittee shall immediately discontinue discharge of the wastewater and report the event to DWR Mooresville Regional Office and Complex NPDES Permitting via telephone and e-mail.

85% of Allowable Monthly Average Effluent Concentrations							
As	Se	Hg	Sb	Cu	Pb	Ni	Tl
37.8 mg/L	3.9 mg/L	9.4 µg/L	4.4 mg/L	6.2 mg/L	2.3 mg/L	19.6 mg/L	0.27 mg/L

d. In the event that additional waters accumulate in the pond(s), the rate for lowering the liquid level in a coal ash pond shall not exceed one (1) foot per day unless a higher rate is supported to the satisfaction of DEMLR and in accordance with NCAC, Title 15A, Subchapter 2K. The facility shall use a floating pump suction pipe with free water skimmed from the basin surface using an adjustable weir. See also paragraph (a), Footnotes 2 and 4, above.

e. Conditions B.(1.) through B.(4.) are not intended to authorize concurrent waste discharges through both Outfalls 002 and 007 except as necessary to make an orderly transition to the new outfall. The Permittee shall cease discharge at Outfall 002 as soon as practical after Outfall 007 is operational.

B.(5.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 111 – Constructed Seep)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge seepage from Outfall 111 (35.707126, -80.374034). Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency [1]	Sample Type	Sample Location [2]
Flow, MGD [3]			Monthly/ Quarterly	Estimate	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Monthly/ Quarterly	Grab	Effluent
Temperature, °C			Monthly/ Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	100.0 mg/L	Monthly/ Quarterly	Grab	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Monthly/ Quarterly	Grab	Effluent
Total Dissolved Solids, mg/L	500 mg/L	500 mg/L	Monthly/ Quarterly	Grab	Effluent
Conductivity, µmho/cm			Monthly/ Quarterly	Grab	Effluent
Chlorides, mg/L			Monthly/ Quarterly	Grab	Effluent
Fluoride, mg/L			Monthly/ Quarterly	Grab	Effluent
Nitrate/nitrite as N, mg/L			Monthly/ Quarterly	Grab	Effluent
Sulfates, mg/L			Monthly/ Quarterly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Monthly/ Quarterly	Grab	Effluent
Total Arsenic, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Selenium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Mercury, ng/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Aluminum, mg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Barium, mg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Cadmium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Chromium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Copper, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Lead, ug/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Manganese, mg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Nickel, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Thallium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Zinc, ug/L [4]			Monthly/ Quarterly	Grab	Effluent

Footnotes:

1. Beginning on the effective date of the permit, the Permittee shall monitor at least 1/month for one year and 1/quarter thereafter.
2. Sampling shall be conducted at the discharge point prior to mixing with any other waste streams. The discharge point is as defined in the October 2014 *Buck Steam Station Ash Basin Surface Water and Seep Monitoring* report or as approved in writing by the Director.
3. See Special Condition C.(10.) Flow Monitoring and Reporting regarding reporting flow when no discharge occurs or the Permittee is unable to obtain a representative sample due to low-flow conditions at the toe drain.
4. See Special Condition C.(6.) Metals Analyses.

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b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

B.(6.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 117 – Constructed Seep)

[15A NCAC 02B .0400 *et seq.*, 02B .0500 *et seq.*]

a. During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge seepage from Outfall 117 (35.7058, -80.3753). Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency [1]	Sample Type	Sample Location [2]
Flow, MGD [3]			Monthly/ Quarterly	Estimate	Effluent
pH	≥ 6.0 and ≤ 9.0 standard units		Monthly/ Quarterly	Grab	Effluent
Temperature, °C			Monthly/ Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	100.0 mg/L	Monthly/ Quarterly	Grab	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Monthly/ Quarterly	Grab	Effluent
Total Dissolved Solids, mg/L	500 mg/L	500 mg/L	Monthly/ Quarterly	Grab	Effluent
Conductivity, µmho/cm			Monthly/ Quarterly	Grab	Effluent
Chlorides, mg/L			Monthly/ Quarterly	Grab	Effluent
Fluoride, mg/L			Monthly/ Quarterly	Grab	Effluent
Nitrate/nitrite as N, mg/L			Monthly/ Quarterly	Grab	Effluent
Sulfates, mg/L			Monthly/ Quarterly	Grab	Effluent
Total Hardness, mg/L as $CaCO_3$			Monthly/ Quarterly	Grab	Effluent
Total Arsenic, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Selenium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Mercury, ng/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Aluminum [4]	6.5 mg/L	6.5 mg/L	Monthly/ Quarterly	Grab	Effluent
Total Barium, mg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Cadmium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Chromium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Copper, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Lead, ug/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Manganese, mg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Nickel, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Thallium, µg/L [4]			Monthly/ Quarterly	Grab	Effluent
Total Zinc, ug/L [4]			Monthly/ Quarterly	Grab	Effluent

Footnotes:

1. Beginning on the effective date of the permit, the Permittee shall monitor at least 1/month for one year and 1/quarter thereafter.
2. Sampling shall be conducted at the discharge point prior to mixing with any other waste streams. The discharge point is as defined in the October 2014 *Buck Steam Station Ash Basin Surface Water and Seep Monitoring* report or as approved in writing by the Director.
3. See Special Condition C.(10.) Flow Monitoring and Reporting regarding reporting flow when no discharge occurs or the Permittee is unable to obtain a representative sample due to low-flow conditions at the toe drain.
4. See Special Condition C.(6.) Metals Analyses.

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b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

SECTION C - ADDITIONAL SPECIAL CONDITIONS

C.(1.) DEFINITIONS

[15A NCAC 02B .0406(b)]

a. The term *low volume waste sources* means wastewater from all sources except those for which specific limitations are otherwise established in 40 CFR 423.11 (b).

b. The term *chemical metal cleaning waste* means any wastewater resulting from cleaning any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning (40 CFR 423.11 (c)).

c. The term *metal cleaning waste* means any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning (40 CFR 423.11 (d)).

C.(2.) NOTIFICATIONS AND SUBMITTALS

[G.S. 143-215.1(b)]

a. Unless specified otherwise, the Permittee shall provide, in writing, notifications required by this permit to:

Division of Water Resources WQ Permitting Section – NPDES	Division of Water Resources Mooresville Regional Office
Attn: Duke Energy Permits Specialist 1617 Mail Service Center Raleigh, NC 27699-1617	610 East Center Avenue, Suite 301 Mooresville, NC 28115

b. Unless specified otherwise, the Permittee shall submit all study plans, study results, and related materials or information required by this permit as follows:

Electronic Version Only:	Electronic Version and Hard Copy:
Division of Water Resources WQ Permitting Section – NPDES Attn: Duke Energy Permits Specialist 1617 Mail Service Center Raleigh, NC 27699-1617	Division of Water Resources Water Sciences Section 1624 Mail Service Center Raleigh, NC 27699-1623

c. Electronic copies shall be PDF files recorded on compact discs (CDs), or as approved by the Division.

C.(3.) CHEMICAL DISCHARGES

[G.S. 143-215.1(b)]

a. Hazardous Wastes.

i. The Permittee shall continue to implement a Best Management Practices (BMP) Plan to control the discharge of oils and the hazardous and toxic substances listed in 40 CFR Part 117 and Tables II and III of Appendix D to 40 CFR Part 122, and shall maintain a current copy of the Plan at the plant site and make such copy available for inspection by EPA and DWR personnel.

ii. Discharge of any waste resulting from the combustion of toxic or hazardous waste to any waste stream which ultimately discharges to waters of the United States is prohibited, unless specifically authorized in this permit.

b. PCBs. There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those once commonly used for transformer fluid.

c. Metal Cleaning Waste. There shall be no discharge of metal cleaning waste or chemical metal cleaning waste.

d. FIFRA-Registered Products. Discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream which may ultimately be released to lakes, rivers, streams or other waters of the United States is prohibited unless specifically authorized elsewhere in this permit.

e. Pesticides. Use of restricted-use pesticides for lake management purposes by applicators licensed by the N.C. Pesticide Board is allowed provided that the treatment is conducted according to label restrictions and other applicable requirements.

f. Chlorine. Discharge of chlorine from the use of chlorine gas, sodium hypochlorite, or other similar chlorination compounds for disinfection in plant potable and service water systems is authorized subject to the conditions of this permit.

C.(4.) DISCHARGES OF OTHER MATERIALS

[G.S. 143-215.1(b); 15A NCAC 02B .0400 *et seq.*]

a. There shall be no discharge of floating solids or visible foam in other than trace amounts. The Permittee shall report such discharges, if observed in other than trace amounts, in the comments section of the appropriate DMR.

b. The Permittee shall report all visible discharges of floating materials (such as an oil slick) in the comments section of the appropriate DMR.

c. The Permittee shall report the presence of cenospheres observed in any samples, in the comments section of the appropriate DMR.

C.(5.) BIOCIDE CONDITION

[15A NCAC 02B .0200 *et seq.*]

The Permittee shall not use any biocides except those approved in conjunction with the permit application. The Permittee shall notify the Director in writing not later than ninety (90) days prior to instituting use of any additional biocide used in cooling systems which may be toxic to aquatic life other than those previously reported to the Division. Such notification shall include completion of Biocide Worksheet Form 101 and a map locating the discharge point and receiving stream. Completion of Biocide Worksheet Form 101 is not necessary for the introduction of a new biocide into an outfall currently being tested for toxicity.

C.(6.) METALS ANALYSES

[G.S. 143-215.1(b)]

Metals analyses shall be performed using EPA methods 200.7 or 200.8 (or the most current versions) except that mercury analyses shall be performed using EPA method 1631E.

C.(7.) PRIORITY POLLUTANT LIMITATIONS AND ANALYSES

[G.S. 143-215.1(b)]

Limitations and monitoring requirements for the 126 Priority Pollutants (per 40 CFR Part 423, Appendix A, exclusive of zinc and chromium) apply only if these substances are added by the permittee for cooling tower maintenance. Compliance with the limitations for the 126 priority pollutants in 40 CFR 423.13 (d)(1) may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR Part 136. All primary industries are required to submit a priority pollutant analysis in accordance with 40 CFR Part 122 with their application for permit renewal.

C.(8.) CHRONIC TOXICITY PERMIT LIMIT (Monthly/Quarterly)
[15A NCAC 02B .0200 *et seq.*]

The effluent discharge shall at no time exhibit observable inhibition of reproduction or significant mortality to *Ceriodaphnia dubia* at an effluent concentration of **90%, 0.7%, 0.3%, or 0.1%**, as specified for the discharge in Sections A and B of this permit.

The permit holder shall perform, at a minimum, *quarterly* or *monthly* monitoring, as specified for the discharge in Sections A and B, using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," Revised December 2010, or subsequent versions or "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised- December 2010) or subsequent versions. The tests will be performed during the months of **March, June, September, and December** if quarterly testing is specified; these months signify the first month of each three-month toxicity testing quarter assigned to the facility. The tests will be performed during each calendar month if monthly testing is specified. Effluent sampling for this testing must be obtained during representative effluent discharge and shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

If the test procedure performed as the first test of any single quarter or month results in a failure or ChV below the permit limit, then multiple-concentration testing shall be performed at a minimum, in each of the two following months as described in "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-December 2010) or subsequent versions.

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the months in which tests were performed, using the parameter code TGP3B for the pass/fail results and THP3B for the Chronic Value. Additionally, DWR Form AT-3 (original) is to be sent to the following address:

Attention: North Carolina Division of Water Resources
Water Sciences Section/Aquatic Toxicology Branch
1621 Mail Service Center
Raleigh, NC 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Water Sciences Section no later than 40 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee shall complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Water Sciences Section at the address cited above.

Should the permittee fail to monitor during a month in which quarterly toxicity monitoring is required, monitoring will be required during the following month. Assessment of quarterly toxicity compliance is based on the toxicity testing quarter, which is the three-month time interval that begins on the first day of the month in which toxicity testing is required by this permit and continues until the final day of the third month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Resources indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an invalid test **and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.**

C.(9.) WASTE TREATMENT MODIFICATIONS
[G.S. 143-215.1(b)]

The Permittee shall notify the Division no later than 14 calendar days prior to start-up of any substantial modifications to waste treatment units or operations at the CTCC Plant, including the addition of the proposed waste holding basin~~.~~ or other new treatment units or operations. In such cases, the Permittee shall also provide a written description of the nature and purpose of the modifications, a revised flow schematic and water balance, if appropriate, and other such information as necessary to maintain an accurate permit application in the NPDES files; see Special Condition C.(2.) Notifications and Submittals.

C.(10.) FLOW MONITORING AND REPORTING
[15A NCAC 02B .0200 et seq.]

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the Permittee shall submit its DMR, as required, and indicate "No Flow" for the seep on the DMR form (15A NCAC 02B .0506(a)(1)(E)).

C.(11.) INSTREAM MONITORING
[G.S. 143-215.66]

a. The Permittee shall conduct monthly instream monitoring (approximately 4,000 ft. upstream and approximately 2,500 feet and 10,000 ft. downstream of Outfall 002) for total arsenic, total selenium, total mercury, total chromium, dissolved lead, dissolved cadmium, dissolved copper, dissolved zinc, total bromide, total hardness (as $CaCO_3$), temperature, turbidity, and total dissolved solids (TDS). Sampling periods and the samples collected shall be representative of the surface waters and facility operations. Sampling locations may be modified with the written approval of the Division in order to provide representative results.

b. The Permittee shall report instream monitoring results on its Discharge Monitoring Reports and include a copy with its NPDES permit renewal application.

c. Instream monitoring by the permittee is provisionally waived considering the permittee's participation in the Yadkin/ Pee Dee River Basin Association provided the Association agrees to sample for all the parameters listed in this condition and at the specified locations~~.~~ and frequencies. Instream monitoring shall be conducted as stated in this permit should the permittee end its participation in the Association.

C.(12.) FISH TISSUE MONITORING NEAR ASH POND DISCHARGE (Outfalls 002/ 007)
[G.S. 143-215.66]

The Permittee shall conduct fish tissue monitoring annually and submit the results with the NPDES permit renewal application. The objective of this monitoring is to evaluate potential uptake of pollutants by fish tissue near the ash pond discharge. The parameters analyzed in fish tissue shall include arsenic, selenium, and mercury. The monitoring shall be conducted in accordance with the sampling plan approved by the Division. The plan should be submitted to the Division within 180 days from the effective date of the permit. Upon approval, the plan becomes an enforceable part of the permit.

C.(13.) CLEAN WATER ACT SECTION 316(a) THERMAL VARIANCE
[15A NCAC 02B .0226]

a. The thermal variance granted under Section 316(a) terminates upon permit expiration. ~~Should~~

b. The Permittee shall conduct such studies as are necessary to determine the ~~permittee wish~~extent of any mixing zone required for the Buck facility's thermal discharge. The findings and recommendations shall be submitted no later than April 30, 2022.

~~a.~~c. The Permittee may request a continuation of the 316(a) thermal variance beyond the term of this permit~~.~~. Reapplication for such continuation shall be submitted in accordance with 40 CFR Part 125,

Subpart H ~~and Section 122.21(m)(6) not later than 180 days prior to permit expiration. Reapplication shall include a basis for continuation such as a) plant operating conditions and load factors are unchanged and are expected to remain so for the term of the reissued permit; b) there are no changes to plant discharges or other discharges in the plant site area which could interact with the thermal discharges; and c) there are no changes to the biotic community of the receiving water body which would impact the previous variance determination~~, and Section 122.21(m)(6) no later than April 30, 2022. Reapplication shall include justification for the continuation.

~~b.~~d. ~~The 316(a)~~Any studies required ~~with the reapplication,~~to satisfy paragraphs (b.) or (c.) shall be performed in accordance with a Division of Water Resources-approved plan. The temperature analysis and the balanced and indigenous study plan shall conform to the specifications outlined in 40 CFR 125 Subpart H, the EPA's Draft 316(a) Guidance Manual, dated 1977, and the Region 4 letter to NCDENR, dated June 3, 2010. EPA shall be provided an opportunity to review the plan prior to the commencement of the study.

~~c.~~e. The Permittee shall submit copies of the study plan and study plan requests, study results, and any other applicable materials to the Division as specified in Special Condition C.(2.) Notifications and Submittals.

C.(14.) CLEAN WATER ACT SECTION 316(b) INTAKE STRUCTURE REQUIREMENTS

[40 CFR Part 125~~.95~~, Subpart J]

~~a. The Permittee shall comply with the Cooling Water Intake Structure Rule per 40 CFR 125.95. The Permittee shall submit all the materials required by the Rule with the next application for renewal of this permit.~~

a. ~~The Permittee shall submit copies of all study plans, study results, and any other applicable materials to~~ The Director has tentatively determined that operation of the CTCC plant's closed-cycle recirculating system is sufficient to satisfy the Best Technology Available (BTA) standards per 40 CFR Part 125, Subpart J. Full approval is contingent upon the Permittee's submittal and the Director's acceptance of additional information documenting the adequacy of the BTA measures.

b. No later than April 30, 2022, the Permittee shall submit to the Division, as specified in Special Condition C.(2.) Notifications and Submittals~~.~~, all additional information required of it by 40 CFR 122.21(r).

c. Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

C.(15.) ASH POND OPERATIONS AND MAINTENANCE

[G.S. 143-215.1(b)]

a. Structural Integrity Inspections of Ash Dams. The facility shall meet the dam design and dam safety requirements per 15A NCAC 02K.

b. Working Capacity.

i. Beginning on the effective date of this permit and lasting until expiration, there shall be no discharge of plant wastes to the ash pond unless the Permittee provides and maintains at all times a minimum free water volume equivalent to the sum of the maximum 24-hour plant discharges plus all direct rainfall and all runoff flows to the pond resulting from a 10-year, 24-hour rainfall event, when using a runoff coefficient of 1.0.

ii. During the term of the permit, the Permittee shall remove settled material from the ponds or otherwise enlarge the available storage capacities in order to maintain the required minimum volumes at all times.

iii. Annually, the Permittee shall determine and report to the permit issuing authority: (1) the actual free water volume of the ash pond, (2) physical measurements of the dimensions of the free water volume in sufficient detail to allow validation of the calculated volume, and (3) a

certification that the required volume is available with adequate safety factor to include all solids expected to be deposited in the ponds for the following year. Any changes to plant operations affecting such certification shall be reported to the Director within five days.

iv. In the event that adequate volume has been certified to exist for the term of the permit, periodic certification is not needed.

c. Closure. The Permittee shall prepare an Ash Pond Closure Plan in anticipation of the facility closure. This Plan shall be submitted to the Division no later than one year prior to the closure of the facility.

d. Closure Agreement. Duke Energy shall continue the process of closing the coal ash surface impoundments at Buck, to be completed by December 31, 2035, through the process of beneficiation as described in the mediated settlement agreement reached in Case No. 1:14-cv-753-LCB-JEP (September 28, 2016) from the United States District Court for the Middle District of North Carolina. Completion of these closure activities will eliminate the seeps from the ash basins at Buck. Within 180 days of completion of all surface impoundment closure activities at Buck, the facility shall determine if a seep meets the applicable state water quality standards established in 15 N.C.A.C. 2B .0200 and submit the results of this determination to the Division of Water Resources for evaluation.

C.(16.) APPLICABLE STATE LAW (State-Enforceable Only)

[G.S. 143-215.1(b)]

The Permittee shall meet the General Statute requirements under G.S. 130A-309.200, *et seq.* This permit may be reopened to include new requirements imposed under these statutes.

C.(17.) GROUNDWATER COMPLIANCE BOUNDARY

[15A NCAC 02L .0107]

The compliance boundary for the disposal system shall be specified in accordance with 15A NCAC 02L .0107(a) or (b), dependent upon the date permitted. The compliance boundary map for this facility is incorporated herein and attached hereto as Attachment A. An exceedance of groundwater standards at or beyond the compliance boundary is subject to remediation action according to 15A NCAC 02L .0106(c), (d), or (e) as well as enforcement actions in accordance with North Carolina General Statute 143-215.6A through 143-215.6C.

C.(18.) NO WAIVER OF RIGHTS

[G.S. 143-215.1(b)]

Nothing contained in this permit shall be construed as a waiver by the Permittee of any right to a hearing it may have pursuant to State or Federal laws or regulations.

C.(19.) ELECTRONIC REPORTING OF DISCHARGE MONITORING REPORTS

[G.S. 143-215.1(b)]

Federal regulations require electronic submittal of all discharge monitoring reports (DMRs) and program reports. The final NPDES Electronic Reporting Rule was adopted and became effective on December 21, 2015.

NOTE: This special condition supplements or supersedes the following sections within Part II of this permit *(Standard Conditions for NPDES Permits)*:

- Section B. (11.) Signatory Requirements
- Section D. (2.) Reporting
- Section D. (6.) Records Retention
- Section E. (5.) Monitoring Reports

1. <u>Reporting Requirements [Supersedes Part II, Section D. (2.) and Section E. (5.)(a)]</u>

The permittee shall report discharge monitoring data electronically using the NC DWR's Electronic Discharge Monitoring Report (eDMR) internet application.

Monitoring results obtained during the previous month(s) shall be summarized for each month and submitted electronically using eDMR. The eDMR system allows permitted facilities to enter monitoring data and submit DMRs electronically using the internet. Until such time that the state's eDMR application is compliant with EPA's Cross-Media Electronic Reporting Regulation (CROMERR), permittees will be required to submit all discharge monitoring data to the state electronically using eDMR and will be required to complete the eDMR submission by printing, signing, and submitting one signed original and a copy of the computer printed eDMR to the following address:

NC DEQ / Division of Water Resources / Water Quality Permitting Section
ATTENTION: Central Files
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

If a permittee is unable to use the eDMR system due to a demonstrated hardship or due to the facility being physically located in an area where less than 10 percent of the households have broadband access, then a temporary waiver from the NPDES electronic reporting requirements may be granted and discharge monitoring data may be submitted on paper DMR forms (MR 1, 1.1, 2, 3) or alternative forms approved by the Director. Duplicate signed copies shall be submitted to the mailing address above. See "How to Request a Waiver from Electronic Reporting" section below.

Regardless of the submission method, the first DMR is due on the last day of the month following the issuance of the permit or in the case of a new facility, on the last day of the month following the commencement of discharge.

C.(19.) ELECTRONIC REPORTING OF DISCHARGE MONITORING REPORTS (cont.)

1. Reporting Requirements (cont.)

Starting on **December 21, 2020**, the permittee must electronically report the following compliance monitoring data and reports, when applicable:

- Sewer Overflow/Bypass Event Reports;
- Pretreatment Program Annual Reports; and
- Clean Water Act (CWA) Section 316(b) Annual Reports.

The permittee may seek an electronic reporting waiver from the Division (see "How to Request a Waiver from Electronic Reporting" section below).

2. Electronic Submissions

In accordance with 40 CFR 122.41(l)(9), the permittee must identify the initial recipient at the time of each electronic submission. The permittee should use the EPA's website resources to identify the initial recipient for the electronic submission.

Initial recipient of electronic NPDES information from NPDES-regulated facilities means the entity (EPA or the state authorized by EPA to implement the NPDES program) that is the designated entity for receiving electronic NPDES data [see 40 CFR 127.2(b)].

EPA plans to establish a website that will also link to the appropriate electronic reporting tool for each type of electronic submission and for each state. Instructions on how to access and use the appropriate electronic reporting tool will be available as well. Information on EPA's NPDES Electronic Reporting Rule is found at: https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule

Electronic submissions must start by the dates listed in the "Reporting Requirements" section above.

3. How to Request a Waiver from Electronic Reporting

The permittee may seek a temporary electronic reporting waiver from the Division. To obtain an electronic reporting waiver, a permittee must first submit an electronic reporting waiver request to the Division. Requests for temporary electronic reporting waivers must be submitted in writing to the Division for written approval at least sixty (60) days prior to the date the facility would be required under this permit to begin submitting monitoring data and reports. The duration of a temporary waiver shall not exceed 5 years and shall thereupon expire. At such time, monitoring data and reports shall be submitted electronically to the Division unless the permittee re-applies for and is granted a new temporary electronic reporting waiver by the Division. Approved electronic reporting waivers are not transferrable. Only permittees with an approved reporting waiver request may submit monitoring data and reports on paper to the Division for the period that the approved reporting waiver request is effective.

Information on eDMR and the application for a temporary electronic reporting waiver are found on the following web page: http://deq.nc.gov/about/divisions/water-resources/edmr

4. Signatory Requirements [Supplements Part II, Section B. (11.)(b) and Supersedes Section B. (11.)(d)]

All eDMRs submitted to the permit issuing authority shall be signed by a person described in Part II, Section B. (11.)(a) or by a duly authorized representative of that person as described in Part II, Section B. (11.)(b). A person, and not a position, must be delegated signatory authority for eDMR reporting purposes.

C.(19.) ELECTRONIC REPORTING OF DISCHARGE MONITORING REPORTS (cont.)

For eDMR submissions, the person signing and submitting the DMR must obtain an eDMR user account and login credentials to access the eDMR system. For more information on North Carolina's eDMR system, registering for eDMR and obtaining an eDMR user account, please visit the following web page: http://deq.nc.gov/about/divisions/water-resources/edmr

Certification. Any person submitting an electronic DMR using the state's eDMR system shall make the following certification [40 CFR 122.22]. NO OTHER STATEMENTS OF CERTIFICATION WILL BE ACCEPTED:

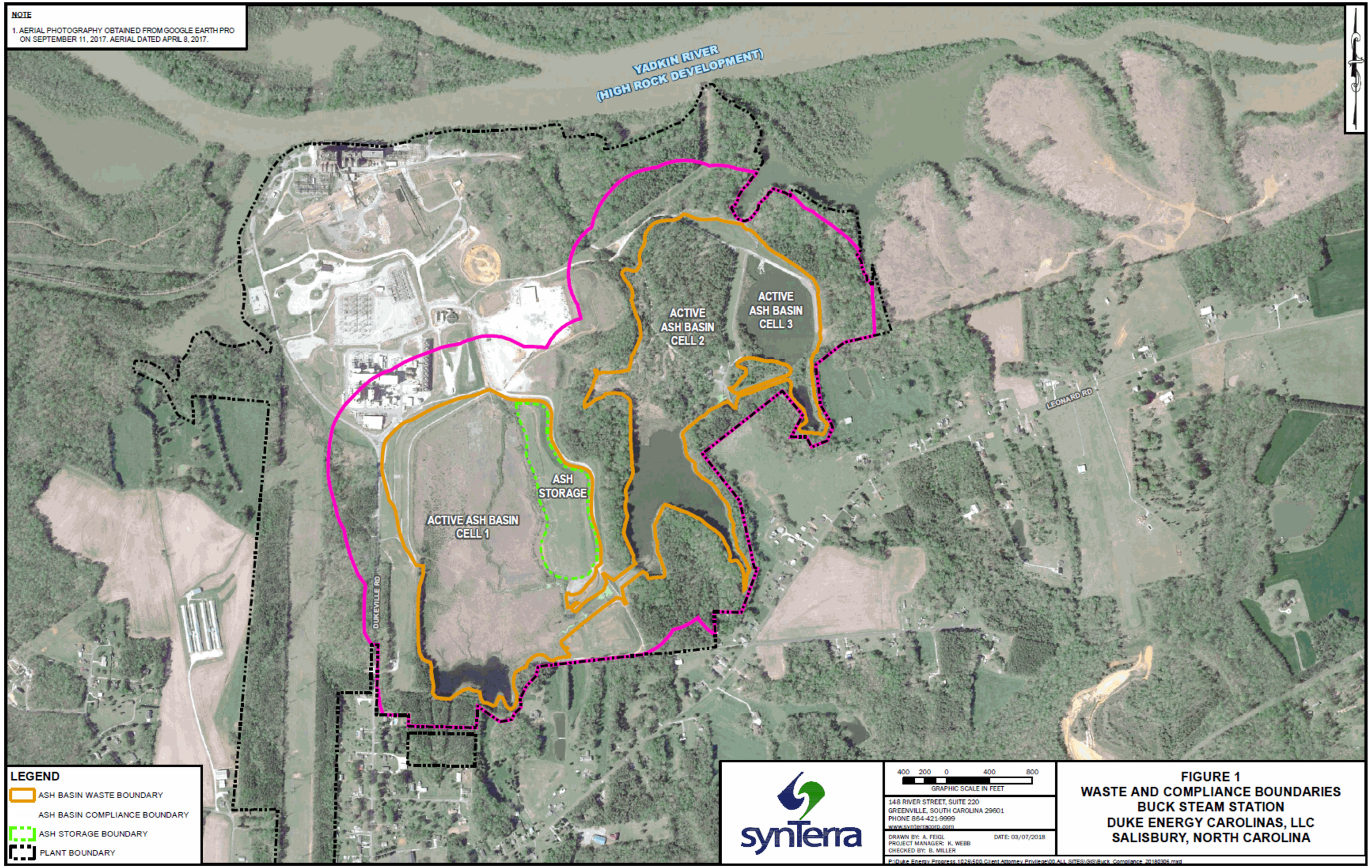
"*I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.*"

5. <u>Records Retention [Supplements Part II, Section D. (6.)]</u>

The permittee shall retain records of all Discharge Monitoring Reports, including eDMR submissions. These records or copies shall be maintained for a period of at least 3 years from the date of the report. This period may be extended by request of the Director at any time [40 CFR 122.41].

ATTACHMENT 1 –
GROUNDWATER COMPLIANCE BOUNDARY MAP

[G.S. 143-215.1(b)]


NOTE
1. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON SEPTEMBER 11, 2017. AERIAL DATED APRIL 8, 2017.
YADKIN RIVER
(HIGH ROCK DEVELOPMENT)
ACTIVE ASH BASIN CELL 2
ACTIVE ASH BASIN CELL 3
ACTIVE ASH BASIN CELL 1
ASH STORAGE
DUKEVILLE RD
LEONARD RD
LEGEND
ASH BASIN WASTE BOUNDARY
ASH BASIN COMPLIANCE BOUNDARY
ASH STORAGE BOUNDARY
PLANT BOUNDARY
400 200 0 400 800
GRAPHIC SCALE IN FEET
148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com
DRAWN BY: A. FEIGL
PROJECT MANAGER: K. WEBB
CHECKED BY: B. MILLER
DATE: 03/07/2018
P:\Duke Energy Progress 1026\500 Client Attorney Privilege\00 ALL SITES\GIS\Buck_Compliance_20180305.mxd
FIGURE 1
WASTE AND COMPLIANCE BOUNDARIES
BUCK STEAM STATION
DUKE ENERGY CAROLINAS, LLC
SALISBURY, NORTH CAROLINA