ROY COOPER
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LINDA CULPEPPER
Director

NORTH CAROLINA
Environmental Quality

December 20, 2018

Mr. Paul Draovitch, Senior Vice President
Environmental, Health and Safety
Duke Energy Progress, LLC
Mail Code EC13K
P.O. Box 1006
Charlotte, North Carolina 28201-1006

Subject: Draft NPDES Permit
Permit NC0024406
Belews Creek Steam Station
Stokes County
Facility Class I

Dear Mr. Draovitch:

Enclosed with this letter is a copy of the draft permit for your facility. Please review the draft very carefully to ensure thorough understanding of the conditions and requirements it contains.

The draft permit contains the following significant changes from your current permit:

- The following monitoring parameters were eliminated (Internal Outfall 002) to be consistent with the latest update to 40 CFR 423: Chlorides and TSS.
- The Technology Based Effluent Limits for Total Arsenic, Total Mercury, Total Selenium, and Nitrate/nitrite as N were added to the permit (Internal Outfall 002) based on the requirements in 40 CFR 423.
- The Decanting Special Conditions were added to Outfall 003, please see A. (3.).
- Monitoring frequency for all parameters that were previously monitored Quarterly were increased to Monthly with an exception of Toxicity (Outfall 003 – normal operations/decanting), please see A. (3.).
- Instream Waste Concentration for Outfall 003 (normal operations/decanting) was increased to 90% from 19% based on the re-consideration of the effluent channel status.
- The compliance dates for fly ash transport water (November 1, 2018) and bottom ash transport water (May 31, 2021) were added to Outfall 003 in accordance with 40 CFR 423.
- The compliance date of November 1, 2020 for Technology Based Effluent Limits was added to Internal Outfall 002 in accordance with 40 CFR 423.

- The Water Quality Based Effluent Limits for Chlorides, Sulfates, Total Aluminum, Total Cadmium, Total Selenium, Total Arsenic, Total Lead, Ammonia, and Total Thallium were added to the permit based on the results of Reasonable Potential Analysis (Outfall 003 – normal operations/decanting).
- A new internal Outfall 006A for the dewatering of the ash pond was added to the permit. Please see Condition A. (4.).
- A separate effluent page for the new Retention Basin (Outfall 003A) was added to the permit. Please see Condition A. (5.).
- A new Outfall for the new Retention Basin (Outfall 006) was added to the permit. Please see Condition A. (7.).
- The Instream Monitoring Special Condition was added to the permit to monitor the impact of the facility on the receiving stream. Please see Special Condition A. (22.).
- A new Outfall for the Toe Drain discharge (Outfall 111) was added to the permit. Please see Condition A. (10.).
- 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. The requirement to begin reporting discharge monitoring data electronically using the NC DWR's Electronic Discharge Monitoring Report (eDMR) internet application has been added to your final NPDES permit. [See Special Condition A. (23.)]

  For information on eDMR, registering for eDMR and obtaining an eDMR user account, please visit the following web page: http://deq.nc.gov/about/divisions/water-resources/edmr.

  For more information on EPA's final NPDES Electronic Reporting Rule, please visit the following web site: https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule
- The turbidity limit was added to the permit (Outfall 003) to meet the state turbidity standard per 15A NCAC 2B .0211(3) (k).
- Clean Water Act Section 316(b) special condition was updated. Please see Special Condition A. (16.).
- A new outfall was added to the permit (Outfall 005). This is a former stormwater outfall SW002, it consists of once through non-contact chiller water and stormwater. Please see Condition A. (6.).
- A new internal outfall was added to the permit (Outfall 009) for the discharge of domestic wastewater. Please see Condition A. (9.).
- A new outfall was added to the permit (Outfall 007) for the emergency spillway discharge from the South Coal Basin. Please see Condition A. (8.).
- The Compliance Boundary special condition was added to the permit. Please see Special Condition A. (25.). This special condition replaces Groundwater Well Construction and Sampling special condition.
- An Applicable State Law special condition was added to the permit. Please see Special Condition A. (26.).

The NPDES standard conditions (Parts II, III, and IV) that are a part of the permit are not included in this draft document (cover, map, and Part I). The conditions are the same as in your current permit except that agency and division names have been updated. The latest version is available at https://bit.ly/2BZ4xxx and can be viewed online or downloaded as a PDF file.

Please provide any comments you have regarding the draft permit to this office by January 25, 2019. At this time, the Division is also publishing a notice in the newspapers of general circulation in Stokes County, inviting public comment on the draft permit. Following the 30-day comment period, we will review all pertinent comments received and take appropriate action on the permit renewal.

If you have any questions about the NPDES permit process, please contact me at the following e-mail address: sergei.chernikov@ncdenr.gov, or telephone number: 919-707-3606.

Sincerely,

Sergei Chernikov, Ph.D.
Environmental Engineer II
Complex NPDES Permitting Unit

cc: Central Files
NPDES Files
EPA Region IV (e-copy)
Winston-Salem Regional Office/Water Quality (e-copy)
Winston-Salem Regional Office/PWS (e-copy)
WSS/Aquatic Toxicology Unit (e-copy)

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

Draft PERMIT

TO DISCHARGE WASTEWATER UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision 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

Belews Creek Steam Station
3195 Pine Hall Road (NCSR 1908)
Belews Creek
Stokes County

to receiving waters designated as the West Belews Creek/Belews Lake (outfalls 001, 005, and 007), unnamed tributary to the Dan River (outfall 003 and Outfall 003A), and Dan River (outfall 006) in the Roanoke River Basin

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

This permit shall become effective

This permit and authorization to discharge shall expire at midnight on

Signed this day

DRAFT

_____
Linda Culpepper, 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 to discharge:

- Outfall 001: once through cooling water consisting of intake screen backwash, recirculating cooling water, station equipment cooling water and once-through cooling water. This outfall discharges to Belews Lake.
- Outfall 003: ash basin discharge consisting of waste streams from the power house and yard holding sumps, ash contact water, chemical holding pond, coal yard sumps, stormwater, treated domestic wastewater, remediated groundwater, coal pile collection basins (collecting contact stormwater from coal piles), emergency release of anhydrous ammonia, release of ammonia during quarterly testing, seepage from coal ash pond, emergency overflows from the existing effluent channels, emergency overflow from the retention basin, and treated FGD wastewater from internal outfall 002. This outfall discharges to Unnamed Tributary (UT) to Dan River.
- Internal Outfall 002: FGD wastewater (discharging to ash pond)
- Outfall 003A/006. Upon completion of construction, discharge from the new lined retention basin. Basin will accept wastes from holding basin, ash contact water, various sumps, coal pile runoff, stormwater runoff, cooling tower blowdown, FGD wastewater, and various low volume wastes such as boiler blowdown, oily waste treatment, wastes/backwash from the water treatment processes, coal pile collection basins (collecting contact stormwater from coal piles), plant area wash down water, cooling tower blowdown, equipment heat exchanger water, remediated groundwater, emergency overflow (rain in excess of designed storm event), toe drain (potential discharge to outfall 006 only), emergency release of anhydrous ammonia, release of ammonia during quarterly testing, and treated domestic wastewater. Outfall 003A discharges to UT to Dan River via the Outfall 003. <u>Upon completion of construction all waste streams previously discharged to ash basin, will be re-routed to the new retention basin. During the transition period, wastewater from the ash pond can also be discharged from Outfall 003. New Outfall 006 will be constructed for the lined retention basin within 2 years to replace Outfall 003A. Outfall 006 will discharge to Dan River, this Outfall will be used for dewatering of the ash basin.</u>
- Outfall 005. This is a former stormwater outfall SW002, consists of once through non-contact chiller water and stormwater. This outfall discharges to Belews Lake.
- Internal Outfall 006A-temporary internal outfall for dewatering of the ash basin, it discharges through Outfall 006.
- Outfall 007 (lat. - 36^{0}16’51.604”; long. 80^{0}03’52.995”). This is an emergency spillway for South Coal Basin. This outfall discharges to Belews Lake. The spillway is designed for a flood greater than 100-year event. Sampling of this spillway is waived due to an unsafe conditions associated with sampling during an overflow event.
- Internal Outfall 009. Domestic wastewater plant. The wastewater from this outfall discharges to UT to Dan River via Outfall 003 or to Dan River via Outfall 006.

- Toe Drain Outfall 111 (lat. - 36^{0}17'54.94"; long. - 80.04'32.57"). Potentially contaminated toe drain. This outfall discharges to UT to Dan River.
- Internal Outfall 006A. Dewatering of the ash pond. This outfall discharges to Dan River via Outfall 006.

From a facility located at Belews Creek Station, 3195 Pine Hall Road (NCSR 1908), Belews Creek in Stokes County, and

2. Discharge wastewater from said treatment works at the location specified on the attached map into Belews Lake, and the UT Dan River/Dan River, which are classified C and WS-IV waters, respectively, in the Roanoke River Basin.

Part I

A. (1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001)

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

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge once-through cooling water and intake screen backwash from outfall 001. Such discharges shall be limited and monitored[3] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Daily Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location[1]
Flow			Continuous	Pump Logs	Effluent
Temperature °C			Daily	Recorder/Grab	Upstream
Temperature °C [2]			Daily	Recorder/Grab	Downstream 1
Temperature °C [2]	32°C		Daily	Recorder/Grab	Downstream 2
Temperature °C			Daily	Recorder/Grab	Effluent

Notes:

1. Sampling locations: Upstream - Upstream at Southern Railroad crossing of Belews Creek OR East Belews Creek (site 405 or site 419), Downstream – Downstream at the discharge from the Dam, approximately 5.3 miles from the outfall (Downstream 2), and approximately 0.5 miles downstream of Outfall 001 (Downstream 1). Upstream and downstream temperature samples are to be measured one foot below the surface.
2. **In no case shall the ambient temperature exceed 32°C as a result of Belews Creek Steam Station operations.** The ambient temperature shall be defined as the daily average downstream (Downstream 2) discharge water temperature. In cases where the Permittee experiences equipment problems and is unable to obtain daily temperatures from the existing temperature monitoring system, monitoring must be reestablished within five working days. The temperature monitoring is required only when the discharge from the Lake Dam occurs.
3. Please See Special Condition A. (23.).

Chlorination of the once through condenser cooling water and/or auxiliary cooling water, discharged through outfall 001, is not allowed under this permit. Should Duke Energy wish to chlorinate its condenser cooling water, a permit modification must be requested and received prior to commencing chlorination.

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

A. (2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Internal Outfall 002)

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

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from **Internal Outfall 002** (treated FGD wet scrubber wastewater to ash settling basin). Such discharges shall be limited and monitored[1] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Pump Logs or similar readings	Effluent
Total Arsenic	8.0 µg/L[2]	11.0 µg/L[2]	Quarterly	Grab	Effluent
Total Mercury[3]	356.0 ng/L[2]	788.0 ng/L[2]	Quarterly	Grab	Effluent
Total Selenium	12.0 µg/L[2]	23.0 µg/L[2]	Quarterly	Grab	Effluent
Nitrate/nitrite as N	4.4 mg/L[2]	17.0 mg/L[2]	Quarterly	Grab	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	50.0 mg/L	Quarterly	Grab	Effluent

Notes:

1. Please See Special Condition A. (23.).
2. In accord with the Steam Electric Effluent Limitations Guidelines for FGD wastewater (40 C.F.R. 423), these limits shall become effective on November 1, 2020. This permit may be reopened and modified if changes are made to 40 C.F.R. 423.
3. The facility shall use EPA method 1631E.

All flows shall be reported on monthly DMRs, should no flow occur during a given month, the words "No Flow" shall be clearly written on the front of the DMR. All samples shall be of a representative discharge.

A. (3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 003 – normal operations/decanting)

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

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 003 Ash settling basin (**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[5] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Pump logs or estimate	Effluent
Oil and Grease[1]	15.0 mg/L	20.0 mg/L	Monthly	Grab	Effluent
Total Suspended Solids[1,7]	30.0 mg/L	50.0 mg/L	Monthly	Grab	Effluent
Total Arsenic	10.0 µg/L	340.0 µg/L	Monthly	Grab	Effluent
Chlorides	250.0 mg/L	250.0 mg/L	Monthly	Grab	Effluent
Sulfates	250.0 mg/L	250.0 mg/L	Monthly	Grab	Effluent
Total Iron[10]	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Copper	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Aluminum	6.5 mg/L	6.5 mg/L	Monthly	Grab	Effluent
Total Cadmium	0.59 µg/L	3.24 µg/L	Monthly	Grab	Effluent
Total Selenium	5.0 µg/L	56.0 µg/L	Monthly	Grab	Effluent
Total Zinc, µg/L			Monthly	Grab	Effluent
Total Chromium, µg/L			Monthly	Grab	Effluent
Total Dissolved Solids, mg/L			Monthly	Grab	Effluent
Total Silver, µg/L			Monthly	Grab	Effluent
Fluoride, mg/L			Monthly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Nitrogen (NO_2 + NO_3 + TKN), mg/L			Monthly	Grab	Effluent
Chronic Toxicity[2]			Quarterly	Grab	Effluent
pH[3,8]			2/Month	Grab	Effluent
Bromides, mg/L			Monthly	Grab	Effluent
Total Lead	2.94 µg/L	75.48 µg/L	Monthly	Grab	Effluent
Total Thallium	2.0 µg/L	2.0 µg/L	Monthly	Grab	Effluent
Total Mercury[4], ng/L			Monthly	Grab	Effluent
Turbidity[6], NTU			Monthly	Grab	Effluent
Total Hardness, mg/L			Monthly	Grab	Effluent
Ammonia[9]	1.0 mg/L	5.0 mg/L	Variable	Grab	Effluent

Notes:

1. Monitoring for TSS, oil and grease and all toxicants shall be performed concurrently with the Chronic Toxicity test.
2. Whole Effluent Toxicity shall be monitored by chronic toxicity (Ceriodaphnia) P/F at 90%. See Condition A. (14.) for details.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. The facility shall employ method 1631E.
5. Please See Special Condition A. (23.).
6. The discharge from this facility shall not cause turbidity in the receiving stream to exceed 50 NTU. If the instream turbidity exceeds 50 NTU due to natural background conditions, the discharge cannot cause turbidity to increase in the receiving stream. Therefore, if the effluent measurement exceeds 50 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to demonstrate the existing turbidity level in the receiving waterbody was not increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)).

NTU - Nephelometric Turbidity Unit.

7. The facility shall continuously monitor TSS concentration when the decanting process commences and the decanting pump shall be shutoff automatically when one-half of the Daily Maximum limit (15 minutes average) is exceeded. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous TSS monitoring only required when the pumps are employed for decanting.
8. The facility shall continuously monitor pH when the decanting process commences and the decanting pump shall be shutoff automatically when 15 minutes running average pH falls below 6.1 standard units or rises above 8.9 standard units. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous pH monitoring is only required when the pumps are employed for decanting.
9. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia. The sampling should be commenced as soon as possible after the release considering personnel safety and every hour thereafter until the sampling indicate no discharge of ammonia.
10. The limit applies only when the chemical metal cleaning waste is being discharged to the basin.

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

<u>Outfall sampling shall be conducted prior to the commingling of wastewater from Outfall 003A.</u>

The facility is allowed to drawdown 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. The limits and conditions in Section A. (4.) of the permit apply when water in the ash settling basin is lowered below the three feet trigger mark.

By November 1, 2018 there shall be no discharge of pollutants in fly ash transport water. This requirement only applies to fly ash transport water generated after November 1, 2018.

By May 31, 2021 there shall be no discharge of pollutants in bottom ash transport water. This requirement only applies to bottom ash transport water generated after May 31, 2021.

The facility shall notify via e-mail DWR Complex NPDES Permitting Unit and DWR Winston-Salem Regional Office seven calendar days prior to the commencement of the decanting.

In accordance with the N.C.G.S. § 130A-309.210, by December 31, 2019, the facility shall convert to the disposal of dry bottom ash, as defined in the Coal Ash Management Act ("CAMA").

A. (4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Internal Outfall 006A – dewatering)

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

During the period beginning on the commencement of dewatering and **lasting until expiration of the permit**, the Permittee is authorized to discharge from outfall 006A Ash settling basin (**Dewatering – removing the interstitial water**). Such discharges shall be limited and monitored[5] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow		2.0 MGD[11]	Daily	Pump logs or estimate	Effluent
Oil and Grease[1]	15.0 mg/L	20.0 mg/L	Weekly	Grab	Effluent
Total Suspended Solids[1,7]	30.0 mg/L	50.0 mg/L	Weekly	Grab	Effluent
Total Arsenic			Weekly	Grab	Effluent
Chlorides, mg/L			Weekly	Grab	Effluent
Total Iron, mg/L[10]	1.0 mg/L	1.0 mg/L	Weekly	Grab	Effluent
Total Copper	211.3 µg/L	231.4 µg/L	Weekly	Grab	Effluent
Total Selenium	134.0 µg/L	1,237 µg/L	Weekly	Grab	Effluent
Total Molybdenum	4,289 µg/L	4,289 µg/L	Weekly	Grab	Effluent
Total Aluminum	174.2 mg/L	174.2 mg/L	Weekly	Grab	Effluent
Fluoride, mg/L			Weekly	Grab	Effluent
Chromium VI, µg/L			Weekly	Grab	Effluent
Total Cadmium, µg/L			Weekly	Grab	Effluent
Total Zinc, µg/L			Weekly	Grab	Effluent
Total Nickel, µg/L			Weekly	Grab	Effluent
Total Dissolved Solids, mg/L			Weekly	Grab	Effluent
Total Phosphorus, mg/L			Monthly	Grab	Effluent
Total Nitrogen (NO_2 + NO_3 + TKN), mg/L			Monthly	Grab	Effluent
Chronic Toxicity[2]			Monthly	Grab	Effluent
pH[3,8]			Weekly	Grab	Effluent
Bromides, mg/L			Weekly	Grab	Effluent
Total Lead	78.9 µg/L	1,668 µg/L	Weekly	Grab	Effluent
Total Thallium, µg/L			Weekly	Grab	Effluent
Total Barium, mg/L			Weekly	Grab	Effluent
Sulfates, mg/L			Weekly	Grab	Effluent
Total Antimony, µg/L			Weekly	Grab	Effluent
Total Mercury[4], ng/L			Weekly	Grab	Effluent
Turbidity[6], NTU			Weekly	Grab	Effluent
Total Hardness, mg/L			Weekly	Grab	Effluent
Ammonia[9]	1.0 mg/L	5.0 mg/L	Variable	Grab	Effluent

Notes:

1. Monitoring for TSS, oil and grease and all toxicants shall be performed concurrently with the Chronic Toxicity test.
2. Whole Effluent Toxicity shall be monitored by chronic toxicity (Ceriodaphnia) P/F at 3.7%. See Condition A. (14.) for details.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. The facility shall employ method 1631E.
5. Please See Special Condition A. (23.).
6. The discharge from this facility shall not cause turbidity in the receiving stream to exceed 50 NTU. If the instream turbidity exceeds 50 NTU due to natural background conditions, the discharge cannot cause turbidity to increase in the receiving stream. Therefore, if the effluent measurement exceeds 50 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving

waterbody, within 24 hours, to demonstrate the existing turbidity level in the receiving waterbody was not increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)). NTU - Nephelometric Turbidity Unit.

7. The facility shall continuously monitor TSS concentration when the dewatering process commences and the dewatering pump shall be shutoff automatically when the one-half of the Daily Maximum limit (15 minutes average) is exceeded. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous TSS monitoring is only required when the pumps are employed for dewatering.
8. The facility shall continuously monitor pH when the dewatering process commences and the dewatering pump shall be shutoff automatically when 15 minutes running average pH falls below 6.1 standard units or rises above 8.9 standard units. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous TSS monitoring is only required when the pumps are employed for dewatering.
9. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia. The sampling should be commenced as soon as possible after the release considering personnel safety and every hour thereafter until the sampling indicate no discharge of ammonia.
10. The limit applies only when the chemical metal cleaning waste is being discharged to the basin.
11. The flow limit is only applicable to interstitial water.

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

<u>Outfall sampling shall be conducted prior to the commingling of wastewater from Outfall 003A.</u>

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. By November 1, 2018 there shall be no discharge of pollutants in fly ash transport water. This requirement only applies to fly ash transport water generated after November 1, 2018.

By May 31, 2021 there shall be no discharge of pollutants in bottom ash transport water. This requirement only applies to bottom ash transport water generated after May 31, 2021.

The facility shall notify via e-mail DWR Complex NPDES Permitting Unit and DWR Winston-Salem Regional Office seven calendar days prior to the commencement of the dewatering.

In accordance with the N.C.G.S. § 130A-309.210, by December 31, 2019, the facility shall convert to the disposal of dry bottom ash, as defined in the Coal Ash Management Act ("CAMA").

When the facility commences the ash pond/ponds dewatering, the facility shall treat the wastewater discharged from the ash pond/ponds using physical-chemical treatment, if necessary, to assure the permit limits are not violated. Duke Energy shall notify DWR NPDES Permitting and DWR Winston-Salem Regional Office, in writing, within seven calendar days of installing additional physical-chemical treatment at this Outfall.

If any one of the pollutants (As, Se, Hg, Ni, and Pb) reaches 85% of the allowable monthly average discharge concentration during dewatering, the facility shall immediately discontinue discharge of the wastewater and report the event DWR Winston-Salem Regional Office and DWR Complex NPDES Permitting via telephone and e-mail.

A. (5.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 003A)

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

During the period beginning upon the commencement of operations of the new Retention Basin and lasting until expiration, the Permittee is authorized to discharge from Outfall 003A (new lined retention basin). Such discharges shall be limited and monitored[2] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Instantaneous	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	50.0 mg/L	Quarterly	Grab	Effluent
pH[3]			Weekly	Grab	Effluent
Total Arsenic	10.0 µg/L	340.0 µg/L	Quarterly	Grab	Effluent
Total Mercury[1], ng/L			Quarterly	Grab	Effluent
Total Selenium	5.0 µg/L	56.0 µg/L	Monthly	Grab	Effluent
Nitrate/nitrite as N, mg/L			Quarterly	Grab	Effluent
Chlorides	250.0 mg/L	250.0 mg/L	Monthly	Grab	Effluent
Sulfates	250.0 mg/L	250.0 mg/L	Monthly	Grab	Effluent
Total Aluminum	6.5 mg/L	6.5 mg/L	Monthly	Grab	Effluent
Total Nickel, µg/L			Quarterly	Grab	Effluent
Bromides,mg/L			Quarterly	Grab	Effluent
Fluoride, µg/L			Quarterly	Grab	Effluent
Total Barium, mg/L			Quarterly	Grab	Effluent
Total Chromium, µg/L			Quarterly	Grab	Effluent
Total Cadmium µg/L	0.59 µg/L	3.24 µg/L	Monthly	Grab	Effluent
Total Hardness, mg/L			Quarterly	Grab	Effluent
Total Copper	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Lead	2.94 µg/L	75.48 µg/L	Monthly	Grab	Effluent
Total Thallium	2.0 µg/L	2.0 µg/L	Monthly	Grab	Effluent
Chronic Toxicity[4]			Quarterly	Grab	Effluent
Ammonia[5]	1.0 mg/L	5.0 mg/L	Daily	Grab	Effluent
Total Iron[6]	1.0 mg/L	1.0 mg/L	Quarterly	Grab	Effluent

Notes:

1. The facility shall use EPA method 1631E.
2. Please See Special Condition A. (23.).
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. Whole Effluent Toxicity shall be monitored by chronic toxicity (Ceriodaphnia) P/F at 90%. See Condition A. (14.) for details.
5. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia.
6. The limit applies when the chemical metal cleaning waste is being discharged to the basin.

The facility shall submit EPA Form 2C for this Outfall within 2 years of commencement of the discharge.

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

Outfall sampling shall be conducted prior to the commingling of wastewater from Outfall 003.

A. (6.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 005)

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

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge once-through non-contact chiller water and stormwater from outfall 005. Such discharges shall be limited and monitored[1] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Daily Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Weekly	Pump Logs or Estimate	Effluent
Temperature, °C			Weekly	Grab	Effluent
TSS, mg/L			Monthly	Grab	Effluent
Total Arsenic, µg/L			Monthly	Grab	Effluent
Total Selenium, µg/L			Monthly	Grab	Effluent
Total Hardness, mg/L			Monthly	Grab	Effluent

Notes:

1. Please See Special Condition A. (23.).

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

A. (7.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 006)

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

During the period beginning upon the commencement of operations of the new Retention Basin and lasting until expiration, the Permittee is authorized to discharge from Outfall 006 (new lined retention basin). Such discharges shall be limited and monitored[2] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Instantaneous	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	50.0 mg/L	Quarterly	Grab	Effluent
pH[3]			Weekly	Grab	Effluent
Total Arsenic, µg/L			Quarterly	Grab	Effluent
Total Mercury[1], ng/L			Quarterly	Grab	Effluent
Total Selenium, µg/L			Quarterly	Grab	Effluent
Nitrate/nitrite as N, mg/L			Quarterly	Grab	Effluent
Chlorides, mg/L			Quarterly	Grab	Effluent
Bromides, mg/L			Quarterly	Grab	Effluent
Total Nickel, µg/L			Quarterly	Grab	Effluent
Sulfates, mg/L			Quarterly	Grab	Effluent
Fluoride, µg/L			Quarterly	Grab	Effluent
Total Barium, mg/L			Quarterly	Grab	Effluent
Total Chromium, µg/L			Quarterly	Grab	Effluent
Total Copper	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Lead	16.9 µg/L	367.7 µg/L	Monthly	Grab	Effluent
Total Thallium			Quarterly	Grab	Effluent
Total Hardness, mg/L			Quarterly	Grab	Effluent
Chronic Toxicity[4]			Quarterly	Grab	Effluent
Ammonia[5]	1.0 mg/L	5.0 mg/L	Daily	Grab	Effluent
Total Iron[6]	1.0 mg/L	1.0 mg/L	Quarterly	Grab	Effluent

Notes:

1. The facility shall use EPA method 1631E.
2. Please See Special Condition A. (23.).
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. Whole Effluent Toxicity shall be monitored by chronic toxicity (Ceriodaphnia) P/F at 17.4%. See Condition A. (14.) for details.
5. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia.
6. The limit applies when the chemical metal cleaning waste is being discharged to the basin.

The facility shall submit EPA Form 2C for this Outfall within 2 years of commencement of the discharge.

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

A. (8.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 007)

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

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from **outfall 007** – Emergency spillway of the South Coal Pile Basin. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Waived	Estimate	Effluent
pH			Waived	Grab	Effluent
TSS			Waived	Grab	Effluent
Oil and Grease			Waived	Grab	Effluent

The emergency spillway is designed for a flood greater than 100-year event in Stokes County. Sampling of this spillway is waived due to unsafe conditions associated with sampling during an overflow event.

Monitoring is required for any other rain event that might trigger a discharge.

A. (9.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Internal Outfall 009)

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

During the period beginning on the effective date of the permit and lasting until expiration, the Permittee is authorized to discharge from Internal Outfall 009 (domestic wastewater plant). Such discharges shall be limited and monitored[1] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Instantaneous	Effluent
BOD, 5-day, 20º C	30.0 mg/L	45.0 mg/L	Weekly	Grab	Effluent
TSS	30.0 mg/L	45.0 mg/L	Weekly	Grab	Effluent
Fecal Coliform (geo. mean)	200/100 mL	400/100 mL	Weekly	Grab	Effluent

Notes:

1. The permittee shall submit Discharge Monitoring Reports electronically using NC DWR's eDMR application system. Please See Special Condition A. (23.).

A. (10.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 111)

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

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 111 – Toe Drain Discharge. Such discharges shall be limited and monitored[1] by the Permittee as specified below:

PARAMETER	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency[2]	Sample Type	Sample Location
Flow, MGD			Monthly/Quarterly	Estimate	Effluent
pH[3]			Monthly/Quarterly	Grab	Effluent
TSS	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
Fluoride, mg/L			Monthly/Quarterly	Grab	Effluent
Total Mercury[4], ng/L	12.0 ng/L	12.0 ng/L	Monthly/Quarterly	Grab	Effluent
Total Barium, mg/L			Monthly/Quarterly	Grab	Effluent
Total Zinc, µg/L			Monthly/Quarterly	Grab	Effluent
Total Arsenic	10.0 µg/L	340.0 µg/L	Monthly/Quarterly	Grab	Effluent
Total Boron, µg/L			Monthly/Quarterly	Grab	Effluent
Total Cadmium, µg/L	0.59 µg/L	3.24 µg/L	Monthly/Quarterly	Grab	Effluent
Total Chromium, µg/L			Monthly/Quarterly	Grab	Effluent
Total Copper, µg/L			Monthly/Quarterly	Grab	Effluent
Total Thallium			Monthly/Quarterly	Grab	Effluent
Total Lead, µg/L			Monthly/Quarterly	Grab	Effluent
Total Nickel, µg/L			Monthly/Quarterly	Grab	Effluent
Total Selenium	5.0 µg/L	56.0 µg/L	Monthly/Quarterly	Grab	Effluent
Nitrate/nitrite as N, mg/L			Monthly/Quarterly	Grab	Effluent
Sulfates, mg/L			Monthly/Quarterly	Grab	Effluent
Bromides, mg/L			Monthly/Quarterly	Grab	Effluent
Chlorides	250.0 mg/L	250.0 mg/L	Monthly/Quarterly	Grab	Effluent
TDS	500.0 mg/L	500.0 mg/L	Monthly/Quarterly	Grab	Effluent
Total Hardness, mg/L			Monthly/Quarterly	Grab	Effluent
Temperature, ^{0}C			Monthly/Quarterly	Grab	Effluent
Conductivity, µmho/cm			Monthly/Quarterly	Grab	Effluent

Notes:

1. Please See Special Condition A. (23.).
2. The facility shall conduct monthly sampling from the effective date of the permit. After one year from the effective date of the permit the monitoring will be reduced to quarterly.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. The facility shall use EPA method 1631E.

If no discharge occurs during the reporting period or the Permittee is unable to obtain a representative sample due to low-flow conditions at the seep, the Permittee shall submit its DMR, as required, and indicate "No Flow" for the seep (15A NCAC 02B .0506(a)(1)(E)).

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

A. (11.) ADDITIONAL CONDITIONS AND DEFINITIONS

[NCGS 143-215.3 (a) (2) and NCGS 143-215.66]

1. EPA methods 200.7 or 200.8 (or the most current versions) shall be used for analyses of all metals except for total mercury (EPA Method 1631E).
2. All effluent samples for all external outfalls shall be taken at the most accessible location after the final treatment but prior to discharge to waters of the U.S. (40 CFR 122.41(j)).
3. The term *low volume waste sources* mean wastewater from all sources except those for which specific limitations are otherwise established in this part (40 CFR 423.11 (b)).
4. 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)).
5. 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)).
6. For all outfalls where the flow measurement is to be “estimated” the estimate can be done by using calibrated V-notch weir, stop-watch and graduated cylinder, or other method approved by the Division.
7. The term "FGD wet scrubber wastewater" means wastewater resulting from the use of the flue-gas desulfurization wet scrubber.
8. There shall be no discharge of polychlorinated biphenyl compounds.
9. The permittee shall report the presence of cenospheres observed in any samples on the DMRs in the comment section.
10. The applicant is permitted to discharge chemical metal cleaning wastes to the ash basin.
11. 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 and regulations.

A. (12.) BOILER CLEANING WASTES

[40 CFR 423]

It has been demonstrated that under certain conditions it is possible to reduce the concentration of metals in boiler cleaning wastes in the range of 92-99+ percent by treatment in ash ponds. Because of dilution problems and the existence of boundary interface layers at the extremities of the plume, it is difficult to prove beyond doubt that the quantity of iron and copper discharge will always be less than one milligram per liter times the flow of metal cleaning when treated in this manner.

The application of physical/chemical methods of treating wastewater has also been demonstrated to be effective in the treatment of metal cleaning wastes. However, the effectiveness of ash pond treatment should be considered in relation to the small differences in effluent quality realized between the two methods.

It has been demonstrated that the presence of ions of copper, iron, nickel and zinc in the ash pond waters was not measurably increased during the ash pond equivalency demonstration at the Duke Energy’s Belews Creek Steam Station. Therefore, when the following conditions are implemented during metal cleaning procedures, effective treatment for metals can be obtained at this facility:

1. Large ash basin providing potential reaction volumes in the ratio of 100 to 1.
2. Well-defined shallow ash delta near the ash basin influent.
3. Ash pond pHs of no less than 6.5 prior to metal cleaning waste addition.
4. Four days retention time in ash pond with effluent stopped.
5. Boiler volume less than 86,000 gallons.
6. Chemicals for cleaning to include only one or more of the following:
    a. Copper removal step- sodium bromate ($NaBrO_2$), ammonium carbonate ($(NH_4)_2CO_3$-H_2O, and ammonium hydroxide (NH_4OH).

b. Iron removal step – hydrochloric acid (HCl), ammonium bifluoride ($(NH_4)HF_2$ and proprietary inhibitors.

7. Maximum dilution of wastewater before entering ash pond: 6 to 1.
8. If monitoring of basin effluents (as required by the permit) after treatment of metal cleaning wastes reveals discharges exceed the limits of the permit, Permittee will:
    1) re-close the basin discharge,
    2) conduct such in-basin sampling as necessary to determine the cause of nonconformance,
    3) take appropriate corrective actions, and
    4) file a report with EPA including all pertinent data.

A. (13.) SPECIAL CONDITION FOR ASH POND DISCHARGE

[40 CFR 423]

Beginning on the effective date of this permit and lasting until expiration, there shall be no discharge of plant wastewater to the ash pond unless the Permittee provides and maintains at all times a minimum free water volume (between the top of the sediment level and the minimum discharge elevation) 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. 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. The Permittee shall determine and report to the permit issuing authority the following on an annual basis:

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 pond for the following year.

Present information indicates a needed volume of 86.2 acre-feet in addition to solids that will be deposited to the ash pond; any change to plant operations affecting such certification shall be reported to the Director within five days.

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

A. (14.) CHRONIC TOXICITY PASS/FAIL PERMIT LIMIT

[15A NCAC 02B .0400 et seq., 02B .0500 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% for Outfall 003 and Outfall 003A, 3.7% for Outfall 006A dewatering, and 17.4% for Outfall 006.

The permit holder shall perform at a minimum, *monthly* monitoring for Dewatering (Outfall 006) and quarterly monitoring for Decanting/Normal operation (Outfalls 003/003A/006) 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. 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 monthly/quarterly test procedure 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, North Carolina 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Water Sciences Section no later than 30 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 will 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 toxicity monitoring is required, monitoring will be required during the following month. Assessment of toxicity compliance is based on the toxicity testing 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.

A. (15.) BIOCIDE CONDITION

[NCGS 143-215.1]

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 of Water Resources. 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 those outfalls containing toxicity testing. Division approval is not necessary for the introduction of new biocides into outfalls currently tested for whole effluent toxicity.

A. (16.) CLEAN WATER ACT SECTION 316 (B)

[40 CFR 125.95]

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 3.5 years from the effective date of the permit.

Copies of all the study plans, study results, and any other applicable materials should be submitted to:

1) Electronic Version Only (pdf and CD)
   Division of Water Resources
   WQ Permitting Section - NPDES
   1617 Mail Service Center
   Raleigh, NC 27699-1617
2) Electronic Version (pdf and CD) and Hard Copy
   Division of Water Resources
   Water Sciences Section
   1621 Mail Service Center
   Raleigh, NC 27699-1621

Based on 40 CFR 125.92 (c) and 40 CFR 125.94 (c) & (d), the Director has determined that operating and maintaining the existing closed-cycle recirculating system meets the requirements for a provisional BTA. The final determination will be made upon review of the materials submitted by the permittee. This determination does not preclude the Division from implementing additional requirements to minimize impingement and entrainment of the aquatic organisms based on the results of the studies.

The facility shall continue to demonstrate that make-up water withdrawals attributed specifically to the cooling portion of the cooling system have been minimized.

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

A. (17.) STRUCTURAL INTEGRITY INSPECTIONS OF ASH POND DAMS

[15A NCAC 02K.0208]

The facility shall meet the dam design and dam safety requirements per 15A NCAC 2K.

A. (18.) FISH TISSUE MONITORING NEAR ASH POND DISCHARGE (Outfall 003/006)

[NCGS 143-215.3 (a) (2)]

The facility 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.

Copies of all the study plans, study results, and any other applicable materials should be submitted to:

1) Electronic Version Only (pdf and CD)
   Division of Water Resources
   WQ Permitting Section - NPDES
   1617 Mail Service Center
   Raleigh, NC 27699-1617
2) Electronic Version (pdf and CD) and Hard Copy
   Division of Water Resources
   Water Sciences Section
   1621 Mail Service Center

Raleigh, NC 27699-1621

A. (19.) PUMPING FROM DAN RIVER INTO BELEWS LAKE

[NCGS 143-215.1]

The Division recognizes the additional cooling water demand on Belews Lake associated with new scrubbers. The operation of a permanent pump station and cooling water intake structure, receiving water pumped from the Dan River to Belews Lake, is hereby authorized under the following conditions:

- Pumping must not lower the flow in Dan River below 110 cfs, which is the Division of Water Resources target flow recommendation for this site. River flow at the pumping location must be checked at a newly installed USGS gauge station near the old USGS Pine Hall gauge station prior to each daily pumping event.
- The Dan River pumps intake will be positioned above the river bottom and have an approach velocity less than or equal to 0.5 feet/second at the inlet of the velocity caps and at the 2mm fine mesh traveling screens to minimize fish entrainment and impingement.
- The withdrawal location will be near the confluence of the spillway channel below Belews Lake Dam and the Dan River. This is a scoured bottom area that does not provide suitable aquatic habitat.
- The facility will perform routine semi-annual lake monitoring to assess limnological conditions in Belews Lake.
- Pumping may occur to a maximum water level in Belews Lake of 724.5 feet msl.
- Pumping must not occur from April 1 through June 30 of any year, in order to avoid the fish spawning period.
- At least 80% of ambient flow as recorded at the new Pine Hall USGS gauge must be bypassed (i.e., withdraw no more than 20% of flow).

This approval allows the operation of two 50 cfs velocity caps, a permanent settling pond with approximately 6000 square feet of surface area, a 4-pump pumping station with a capacity not to exceed 100 cfs, force main, an electrical substation with an access road, and a diffuser in Belews Lake. Please note that this authorization does not affect the legal requirements to obtain other permits or approvals which may be required for this activity by the Division of Water Resources or other agencies, including the Division of Land Resources, or the US Army Corps of Engineers. The Division reserves the right to reopen this permit in the event of unforeseen negative environmental impacts due to this pumping operation.

A. (20.) BROMIDE REDUCTION EVALUATION

[NCGS 143-215.1]

Duke Energy shall investigate technical solutions to reduce bromide in the discharge from Outfall 003. Duke Energy shall submit semi-annual reports on the efforts it undertakes to reduce bromide at the source as well as efforts at downstream water treatment plants to reduce formation of total trihalomethanes (TTHM). Duke Energy shall continue to work with the downstream public water supply systems to find a solution to the issue of the TTHM formation in the distribution system of the downstream water systems. The semi-annual status reports (3 copies) shall be submitted to the Division of Water Resources, Complex NPDES Permitting Unit.

In the event of a Maximum Contaminant Level (MCL) violation for Total Trihalomethanes (THMs) at the Town of Madison, the City of Eden or any wholesale customers of those systems, Duke Energy will within 14 days of the request provide the latest available bromide monitoring data that can be incorporated into required Public Notices issued by the public water system(s).

A. (21.)DOMESTIC WASTEWATER TREATMENT PLANT

[NCGS 143-215.1]

The domestic wastewater treatment plant shall be properly operated and maintained to ensure treatment of domestic wastewater to secondary levels.

A. (22.) INSTREAM MONITORING (Outfall 003)

[15A NCAC 02B.0500 ET SEQ.]

The facility shall conduct monthly instream monitoring (approximately 2.7 miles upstream at the Highway 311 bridge and approximately 250 meters downstream of the ash pond discharge in Dan River) 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). The monitoring results shall be reported on the facility's Discharge Monitoring Reports and included with the NPDES permit renewal application.

The facility shall also conduct instream monitoring of the Unnamed Tributary downstream of the discharges from outfalls 003, 003A and 111, sampling shall be conducted at the culvert just to the north of Middleton loop road. The monitoring can be discontinued upon cessation of the discharge from all three outfalls. The monitoring parameters shall include 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, pH, chlorides, and total dissolved solids (TDS). The monitoring results shall be reported on the facility's Discharge Monitoring Reports and included with the NPDES permit renewal application.

A. (23.) 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 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 DENR / 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.

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: http://www2.epa.gov/compliance/final-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 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.

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. **Records Retention [Supplements Section D. (6.)]**

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].

A. (24.) THERMAL VARIANCE

[40 CFR 125, Subpart H]

In order to continue the Thermal Variance beyond the term of this permit the facility shall develop and conduct comprehensive 316(a) studies. The 316(a) studies shall be performed in accordance with the 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 and the EPA's Draft 316(a) Guidance Manual, dated 1977, and the Region 4 letter to NCDENR, dated June 3, 2010.

The study shall be performed in accordance with the following schedule:

1) Effective date of the permit +60 days – submit the Draft Study Plan to the DEQ and EPA, the DEQ will perform the Plan review and provide the comments to Duke within 30 days of the Plan receipt.
2) Effective date of the permit +120 days – meet with the DEQ to provide responses to the DEQ/EPA comments and discuss the Study Plan.
3) Effective date of the permit +150 days – submit the Final Study Plan to the DEQ and to the EPA.
4) After obtaining an approval of the Study Plan, conduct 1 year of the monitoring.
5) 120 days after completing the monitoring, submit the study results and application to continue the 316a variance to DEQ.

Copies of all the study plans, study results, and any other applicable materials should be submitted to:

1) Electronic Version Only (pdf and CD)
   Division of Water Resources
   WQ Permitting Section - NPDES
   1617 Mail Service Center
   Raleigh, NC 27699-1617
2) Electronic Version (pdf and CD) and Hard Copy
   Division of Water Resources
   Water Sciences Section
   1621 Mail Service Center
   Raleigh, NC 27699-1621

A. (25.) COMPLIANCE BOUNDARY

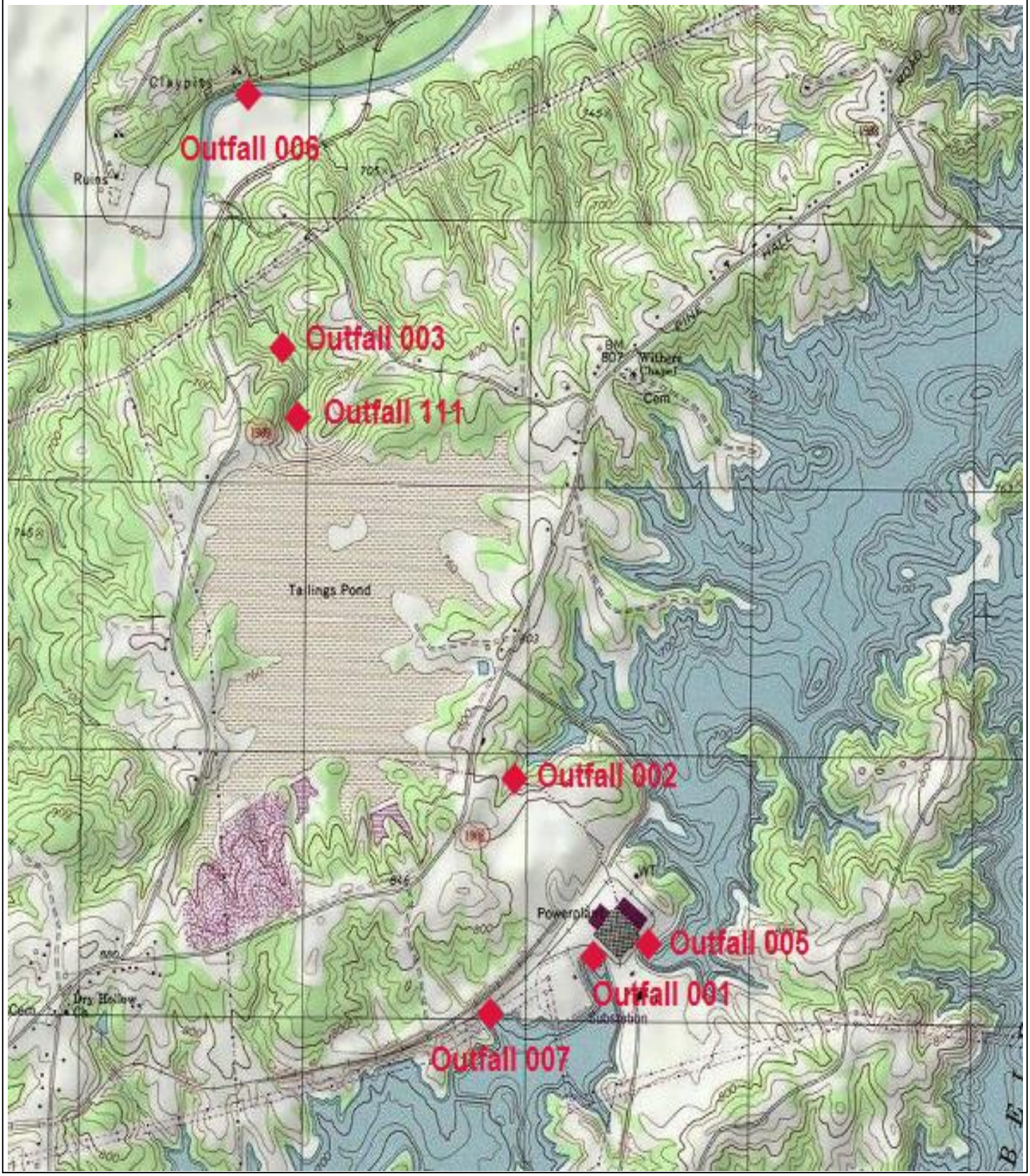
[15A NCAC 02L.0107]

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. 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. The compliance boundary map for this facility is incorporated herein and attached hereto as Attachment A.

A. (26.) APPLICABLE STATE LAW (State Enforceable Only)

[NCGS 143-215.1(b)]

This facility shall meet the General Statute requirements under NCGS § 130A-309.200 *et seq*. This permit may be reopened to include new requirements imposed under these Statutes.

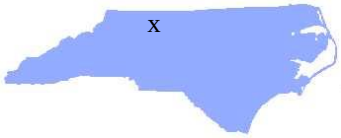


NC0024406 - Belews Creek Steam Station

Latitude (001):	36°16'49.5"	Receiving Stream (001, 005, 007):	Belews Lake, class C
Longitude (001):	80°03'39.8"	Receiving Stream (003, 111):	UT to Dan River,
Latitude (003):	36°18'22.0"	Class WS-IV	
Longitude(003):	80°04'50.7"	Receiving Stream (006):	Dan River,
Latitude (005):	36°17'50.3"	Latitude (006):	36°18'34.8"
Longitude(005):	80°3'29.7"	Longitude(006):	80°04'36.1"

North

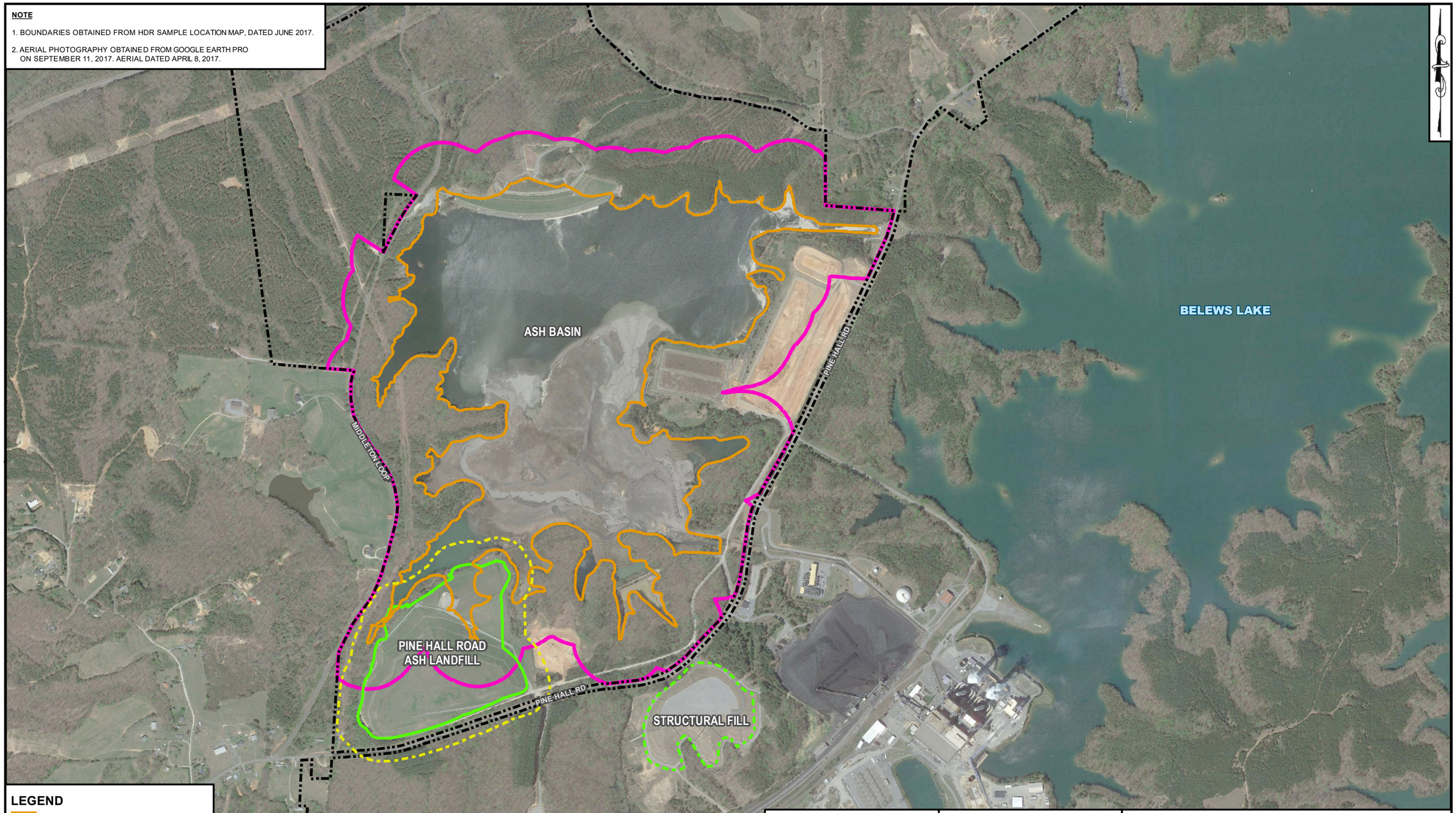
Facility Location



Duke Energy- Belews Steam Station
NC0024406
Map not to scale

NOTE

1. BOUNDARIES OBTAINED FROM HDR SAMPLE LOCATION MAP, DATED JUNE 2017.
2. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON SEPTEMBER 11, 2017. AERIAL DATED APRIL 8, 2017.



LEGEND

- ASH BASIN WASTE BOUNDARY
- ASH BASIN COMPLIANCE BOUNDARY
- LANDFILL WASTE BOUNDARY
- LANDFILL COMPLIANCE BOUNDARY
- STRUCTURAL FILL BOUNDARY
- PLANT BOUNDARY

synTerra

500 250 0 500 1,000
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\BelewsCreek_Modified_20180207.mxd

FIGURE 1
WASTE AND COMPLIANCE BOUNDARIES
BELEWS CREEK STEAM STATION
DUKE ENERGY CAROLINAS, LLC
BELEWS CREEK, NORTH CAROLINA