


Application Review

Issue Date: October 3, 2022

Region: Washington Regional Office
County: Lenoir
NC Facility ID: 5400216
Inspector's Name: N/A
Date of Last Inspection: N/A
Compliance Code: N/A

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): Carolina Poultry Power RG3, LLC Facility Address: Carolina Poultry Power RG3, LLC Brothers Road LaGrange, NC 28551 SIC: 4911 / Electric Services NAICS: 221112 / Fossil Fuel Electric Power Generation Facility Classification: Before: Synthetic Minor After: Synthetic Minor Fee Classification: Before: Synthetic Minor After: Synthetic Minor			SIP: 2D (.0504, .0515, .0516, .0521, .0524, .0535, .0540, .0605, .0611, .1100, .1111) and 2Q (.0315, .0317 and .0711); Limitation to avoid 2D .1806 NSPS: 40 CFR Part 60, Subpart Dc NESHAP: 40 CFR Part 63, Subpart JJJJJJ PSD: N/A PSD Avoidance: PM10 NC Toxics: arsenic, acrolein, benzene, chlorine, formaldehyde, hydrochloric acid, mercury and sulfuric acid 112(r): N/A Other: NCGS 62-133.8(g) SB3 State BACT
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 5400216.22A Date Received: 05/05/2022 Application Type: Greenfield Facility Application Schedule: State Existing Permit Data Existing Permit Number: N/A Existing Permit Issue Date: N/A Existing Permit Expiration Date: N/A
Rich Deming Principal (252) 800-1969 3730 N Main Street Farmville, NC 27828	Rich Deming Principal (252) 800-1969 3730 N Main Street Farmville, NC 27828	Kim Melvin Project Manager (864) 414-3059 116 Hidden Hill Road Spartanburg, NC 29301	
Review Engineer: Kurt Tidd Review Engineer's Signature: 		Date: 10/03/2022	Comments / Recommendations: Issue 10745/R00 Permit Issue Date: 10/03/2022 Permit Expiration Date: 09/30/2030

1. Purpose of Application:

Carolina Poultry Power RG3, LLC (referred to as CPP in this review) submitted a greenfield application to build a poultry litter-to-energy facility in LaGrange, North Carolina, which will use the inherent heating value in poultry litter to generate electricity and Renewable Energy Certificates (RECs). This application was submitted for the operation of one poultry litter fuel-fired boiler (97 million Btu per hour maximum heat input) and a dry sorbent injection (lime) storage silo (2,400 cubic feet/31 tons maximum storage capacity). A Non-Hazardous Secondary Material (NHSM) fuel determination was submitted with the original permit application for CPP's Farmville facility (ID No. 7400310) to the NC Division of Air Quality (DAQ), demonstrating that the litter is not a solid waste material waste material when used as fuel in the combustion unit under the meaning of Title 40, Part 241 of the Code of Federal Regulations. The litter to be used at CPP LaGrange is expected to be the same as the litter used at the other CPP permitted facilities, and the permit application ascertains that the original approval remains applicable to this design. The NHSM approval for the Farmville facility was issued in a letter from former NC DAQ Permitting Chief, William Willets, dated 10/04/2016.

Background:

CPP was issued Synthetic Minor air permits for similar facilities located in Farmville (ID No. 7400310) and Wilson (ID No. 9800244), North Carolina. Per the application, the Farmville site began operation in late 2019 and has been collecting data on the dedicated fuel source, which is the same fuel being proposed for this CPP LaGrange site. The Wilson facility is not yet in operation.

2. Application Chronology:

Application received	05/05/2022
Acknowledgement letter	05/05/2022
Modeling/application received at AQAB	05/04/2022
Add info request for modeling	06/02/2022
Info received for modeling	06/06/2022
AQAB modeling review memo issued	06/07/2022
Draft permit sent to facility for review	07/08/2022
Permit draft approval from facility with no changes	07/12/2022
Secondary review of draft by RCO Permits	07/14/2022
Public notice of draft 30-day comment period	07/18/2022
Comment period ended	08/17/2022
30-day comment period extension granted by Director	08/12/2022
Extended comment period ended	09/16/2022
Permit Issued	10/03/2022

The Greenfield Permit Application was received at the Washington Regional Office (WaRO) on May 5, 2022. The location of this site is just north of 5437 Brothers Road, in LaGrange North Carolina. Because there's not yet an official physical address for the facility the county tax parcel ID No. 15787 is cited as the location in the permit. This application was signed by Rich Deming, Principal. This application contained a P.E. seal for the entire application and noting specifically Forms A through D by Project Integration (PI) Narrative Report Document (Kimberly E. Melvin North Carolina P.E. Seal # 025853).

The application fee of \$400 was received on May 5, 2022. The zoning determination was signed on May 17, 2022 by John P. Craft, Town Manager, noting the proposed operation is consistent with applicable zoning ordinances. The signed zoning determination was electronically submitted to the WaRO on May 23, 2022, and a hard copy was received on May 27, 2022.

A Toxics Modeling Analysis was sent to Tom Anderson, marked received by Air Quality Analysis Branch (AQAB) on May 4, 2022 and assigned to Nancy Jones for review. During the review process Ms. Jones requested some revised modeling information which was submitted to AQAB on June 6, 2022. A toxics modeling analysis memorandum dated 06/07/2022 states the modeling adequately demonstrates compliance with the Acceptable Ambient Limits (AALs) on a source-by-source basis for all modeled Toxic Air Pollutants (TAPs). The toxic air pollutants included emissions of the following TAPs: acrolein, arsenic, benzene, chlorine, formaldehyde, hydrogen chloride, mercury, and sulfuric acid.

A Best Available Control Technology (BACT) analysis required by Senate Bill 3 (SB3) of the 2007 Legislative Session for new renewable energy facilities was submitted to Raleigh Central Office (RCO) Permits and assigned to Jeff Twisdale for review. The BACT determination was given a separate application number (5400216.22B) and will be issued administratively in a new permit revision. A placeholder permit condition will be included in the permit for the BACT determination.

The Director determined that a public notice should be issued for the draft permit, allowing thirty days for comments. The notice was issued on July 18, 2022 and ended on August 17, 2022. On August 5, 2022 a letter was electronically submitted to the Director by the Cape Fear River Watch, Center for Biological Diversity, CleanAIRE NC, Clean Water for North Carolina, Down East Coal Ash Environmental and Social Justice Coalition, Environmental Justice Community Action Network, North Carolina Conservation Network, NC Sierra Club, Public Justice, Sound Rivers, and Waterkeeper Alliance requesting an extension of the public comment period. The Director granted the extension on August 12, 2022. The extension ended on September 16, 2022.

- (a) A permit to emit toxic air pollutants shall not be required under this Section for:
- (27) an air emission source that is any of the following:
- (A) subject to an applicable requirement under 40 CFR Part 61, as amended.
- (B) an **affected source under 40 CFR Part 63**, as amended; or
- (C) subject to a case-by-case MACT permit requirement issued by the Division

Therefore, the facility is not subject to a toxics review, and no toxics permit conditions will be created and placed in the permit. However, the DAQ must assess toxics emissions to determine if there is a risk for public health per Session Law (2012-91). CPP submitted toxics emissions calculations and air dispersion modeling to assist in expedition of DAQ's review. The modeling was reviewed by Nancy Jones with the DAQ Air Quality Analysis Branch (AQAB), and the AQAB memo approving the modeling was issued on 6/07/2022.

CPP compared the emissions to the unobstructed and vertically oriented stack Toxic Air Pollutant Permitting Emission Rates (TPERs), as provided in 2Q .0711. Acrolein, arsenic, benzene, chlorine, formaldehyde, hydrochloric acid, mercury, and sulfuric acid were identified as emitted over their respective TPERs and were modeled. Benzene was the worst-case toxic, which modeled at 21% of its Acceptable Ambient Level (AAL, as provided in 2D .1107). The next highest were acrolein and hydrogen chloride at 2% of their AALs. The rest of the toxics modeled at or below 1% of their AALs. The results are provided below of the toxics modeling per the 6/07/2022 memorandum. This memo noted that the modeling adequately demonstrates compliance with the AALs on a source-by-source basis for all modeled TAPs.

TAP	Averaging Period	Max. Conc. ($\mu\text{g}/\text{m}^3$)	AAL ($\mu\text{g}/\text{m}^3$)	% of AAL
Acrolein	1-hour	1.82	80	2
Arsenic	Annual	3.1E-6	2.1E-6	<1
Benzene	Annual	0.025	0.12	21
Chlorine	1-hour	0.28	900	<1
	24-hour	0.11	37.5	<1
Formaldehyde	1-hour	2	150	1
Hydrogen Chloride	1-hour	10.47	700	2
Mercury	24-hour	6E-4	0.6	1
Sulfuric Acid	1-hour	0.13	100	<1
	24-hour	0.05	12	<1

Some emissions rates that were applied to the modeling (as cited in the AQAB memo) are slightly elevated from values calculated in the permit. The modeled emissions (as relative to the hourly/daily/yearly AALs) are provided in the table below.

Affected Source(s)	Toxic Air Pollutant	Emission Rate
poultry litter-fired boiler (ES-B1)	Acrolein	0.502 pounds per hour
	Arsenic & Compounds (107-02-8) (total mass of elemental AS, arsine and all inorganic compounds) (ASC (7778394))	0.438 pounds per year
	Benzene (71-43-2)	3,582 pounds per year
	Chlorine (7782-50-5)	2.38 pounds per day
	Formaldehyde (50-00-0)	0.553 pounds per hour
	Hydrogen chloride (hydrochloric acid) (7647-01-0)	2.893 pounds per hour
	Mercury, vapor (Component of HGC) (7439-97-6)	0.14 pounds per day
	Sulfuric acid (7664-93-9)	0.046 pounds per hour and 1.10 pounds per day

The toxics for which CPP calculated as emitted at rates less than the respective TPERs are referenced with the TPERs below.

Pollutant	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
Acetaldehyde (75-07-0)				28.43
Benzo(a)pyrene (Component of 83329/POMTV & 56553/7PAH) (50-32-8)	3.044			
Beryllium Metal (unreacted) (Component of BEC) (7440-41-7)	0.378			
Cadmium Metal, elemental, unreacted (Component of CDC) (7440-43-9)	0.507			
Carbon tetrachloride (56-23-5)	618.006			
Chlorobenzene (108-90-7)		92.7		
Chloroform (67-66-3)	396.631			
DEHP (Di(2-ethylhexyl)phthalate) (117-81-7)		1.3		
Ethylene dichloride (1,2-dichloroethane) (107-06-2)	350.511			
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (57653-85-7)	0.007			
Manganese & compounds (MNC)		1.3		
Methyl chloroform (71-55-6)		505.4		257.98
Methylene chloride (75-09-2)	2213.752		1.79	
Nickel metal (Component of NIC) (7440-02-0)		0.3		
Pentachlorophenol (87-86-5)		0.1	0.03	
Perchloroethylene (tetrachloroethylene) (127-18-4)	17525.534			
Phenol (108-95-2)			1.00	
Styrene (100-42-5)			11.16	
TCE (trichloroethylene) (79-01-6)	5442.140			
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (Component of CLDC & 83329/POMTV) (1746-01-6)	0.0002767			
Toluene (108-88-3)		197.96		58.97
Vinyl chloride (75-01-4)	35.051			
Xylene (mixed isomers) (1330-20-7)		113.7		68.44

6. Compliance Status:

The facility is a Greenfield; therefore, there is no compliance history. The Farmville facility is the only CPP facility currently in operation and there have been no non-compliance issues at the facility.

7. Facility Emissions Review

I have reviewed the emissions calculations provided in the permit application, and a few corrections were required:

- CPP incorrectly labeled the PM and PM10 lbs/year emissions for the DSI silo in units of tons per year and this affected the facility-wide emissions totals. I have revised Form D1 and CPP's emissions calculations spreadsheet for the silo, and I have attached them to the permit application. It should be noted that the DSI

silo could be added to an Insignificant Activities Attachment to the permit, rather than be a permitted source. This may be addressed later with application 5400216.22B for the BACT determination.

- Sulfuric acid is a TAP and a particulate, but it is not a HAP. The sulfuric acid emissions were subtracted from the facility-wide HAP total and added to the PM/PM10/PM2.5 facility totals. The revision has been included in the D1 form.
- HCl emissions have been corrected on the D1 form to reflect the calculations in CPP’s spreadsheets.

I have reviewed all emission factors and emissions calculations in the application. The factors and methods of calculation are similar to those selected for the Farmville and Wilson CPP facilities. This permit will require testing for numerous pollutants; therefore, the emissions for those pollutants will be re-evaluated based on the test results. CO emissions from the application show levels below the Title V threshold; however, the facility is being required to test for this pollutant to determine the actual emission/emission factor for the boiler. Depending on the quality/moisture of fuel, CO emissions can be variable. Upon the review of the results of the stack tests, actual and potential emissions will be adjusted accordingly.

Facility-Wide Emissions

Pollutant	Potential Emissions Before Controls (tons/year)	Potential Emissions After controls (tons/year)
PM	1290.72	12.91
PM ₁₀	1290.67	12.91
NOx	178.44	98.14
CO	93.47	93.47
SO ₂	118.96	95.17
VOC	7.22	7.22
Highest HAP (HCl) (Next largest HAP <2 tpy)	139.71	9.78
Total HAPs	147.55	17.54
Greenhouse Gases	96,592	96,592

Since this is a greenfield facility, actual emissions were estimated by Carolina Poultry Power RG3 to be the same as the potential controlled emissions.

8. Summary of Permit Changes:

The facility is a Greenfield, and the following stipulations have been included in the permit: 2D .0202, 2D .0504, 2D .0515, 2D .0516, 2D .0521, 2D .0524 (40 CFR 60, Subpart Dc), 2D .0535, 2D .0540, 2D .0605, 2D .0611, 2D .1111 (40 CFR 63, Subpart JJJJJ), 2D .1806 (Avoidance), 2Q .0315, 2Q .0317 (Avoidance), and NCGS 62.133.8(g) State BACT (SB3).

9. Public Comments and DAQ Washington Regional Office Response

The Director of the Division of Air Quality determined that a public notice should be issued for the draft permit, allowing thirty days for comments. The notice was issued on July 18, 2022 and ended on August 17, 2022. On August 5, 2022 a letter was electronically submitted to the Director by the Cape Fear River Watch, Center for Biological Diversity, CleanAIRE NC, Clean Water for North Carolina, Down East Coal Ash Environmental and Social Justice Coalition, Environmental Justice Community Action Network, North Carolina Conservation Network, NC Sierra Club, Public Justice, Sound Rivers, and Waterkeeper Alliance requesting an extension of the public comment period. The Director granted the extension on August 12, 2022. The extension ended on September 16, 2022.

The DAQ received three sets of comments during the above noted public comment periods. All of the comments were considered and the Washington Regional Office response to the comments are provided below. There were no comments specific to the draft permit content.

August 5, 2022 Public Comment Voicemail Box

One voicemail was recorded. No name was provided in the voicemail, but a phone number was provided. The message was as follows:

I was calling about the air quality here in Wilmington, North Carolina and the excessive amount of pollution by local communities near woodchip facilities in particular, basically blanketing our community in sawdust and us having to breathe in particulates, wood particulates in particular. Just trying to get the North Carolina state on board with the community here because our air quality is suffering and we are having to deal with and breathe it on a daily basis and nobody is holding any of these companies or the state port accountable. So yeah, feel free to call me. My number is 910-616-9410.

Washington Regional Office Response

Carolina Poultry Power is not located in or near Wilmington. Furthermore, it is not a woodchip facility. The facility combusts a mixture of poultry waste and sawdust. The mixture is unloaded inside an enclosed structure, under a negative vacuum. This is mainly used as an odor control, but has the secondary effect of controlling fugitive emissions from the unloading process. There will be no outdoor storage piles.

It is possible this message was meant for the Enviva draft permit, which went out to public notice on July 12, 2022, and had a different voicemail phone number (919) 707-8430. Betsy Huddleston has forwarded the comment to Wilmington Regional Office (on September 29, 2022), as it also appears to be a complaint.

September 2, 2022 DAQ Public Comment Email

One email was submitted to DAQ at the public comment address.

Email Comment. **From:** Ben Barnes <wooster51@gmail.com>
Sent: Friday, September 2, 2022 8:52 AM
To: SVC_DENR.DAQ.publiccomments <DAQ.publiccomments@ncdenr.gov>
Subject: [External] CPP.22A

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to [Report Spam](#).

I wish to express my opposition to the issuance of an AQ permit for the Carolina Poultry Power facility in La Grange. I do not believe burning biomass is carbon neutral or good for air quality. I retired from environmental compliance for 30 years and know that facilities are not operated according to permit requirements and best practices.

Thanks
Ben Barnes
Elm City, NC

Washington Regional Office Response

The Division is obligated to issue an air quality permit to Carolina Poultry Power unless public comments reveal that DAQ was in error or incomplete in its evaluation of the proposed facility from an air quality regulatory standpoint. DAQ Washington Regional Office will attend all initial performance stack tests at the LaGrange facility, will perform thorough permit compliance physical inspections, monitoring data review and records review.

August 5, 2022 Letter Submittal

A letter was submitted to Mike Abraczinskas on behalf of the Cape Fear River Watch, Center for Biological Diversity, CleanAIRE NC, Clean Water for North Carolina, Down East Coal Ash Environmental and Social Justice Coalition, Environmental Justice Community Action Network, North Carolina Conservation Network, NC Sierra Club, Public Justice, Sound Rivers and Waterkeeper Alliance. The letter requested an extension of the public comment period, which the Director granted. The following comments were stated in the August 5th letter.

Environmental justice requires the “fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” As stated in DEQ’s recently updated Public Participation Plan, “meaningful involvement” means “people have an opportunity to participate in decisions about activities that may affect their environment and/or health, the public’s contribution can

influence the regulatory agency's decision, community concerns will be considered in the decision making process, and, decision-makers will seek out and facilitate the involvement of those potentially affected."

Where, as here, a proposed permit would authorize activity in a community the demographics of which suggest the need for heightened procedural protection, affording additional time during the comment period is necessary to ensure "meaningful involvement" of impacted community members. As noted in the Draft Environmental Justice Report prepared in conjunction with the proposed permit, the Carolina Poultry Power facility in La Grange is located in an economically distressed (Tier 1) county and in a community with a significantly greater percentage of Black or African American residents than the state average. In addition, the facility is located in a census tract in which agency policy regarding Limited English Proficiency recognizes the need for additional measures to ensure adequate public engagement.

There can be no meaningful involvement if, as is too often the case, the public is unaware of proposed agency action or lacks sufficient time to consult experts to better understand the impacts of a proposed permit on their health and/or environment. As previously stated by the NCDEQ Secretary's Environmental Justice and Equity Advisory Board, in the context of another permitting proposal regarding animal waste management, "DEQ cannot assure that the protection afforded under the permit is adequate if it fails to provide sufficient opportunities for participation of affected communities to inform the permit conditions."

Washington Regional Office Response.

The Director granted the request to extend the public comment period to September 16, 2022. As of September 30, 2022, no further correspondence has been received by DAQ from the listed parties in the September 5, 2022 letter.

The Director requested that a DEQ Environmental Justice (EJ) Report be completed for the Carolina Poultry Power LaGrange site so that additional outreach would be identified and conducted. The Report includes information on the local (within a one-mile radius of the facility) demographics and compares those to the county and statewide census data. The report also includes information on Lenoir County's health rankings and outcomes and the types of other industrial sites located in the area around CPP. The Department used the results from the draft EJ report to conduct additional outreach for this draft permit. In conjunction with the actions recommended by the EJ report, the following specific outreach actions were completed:

- Generated a one-page flyer in English and Spanish. The flyer was distributed to local businesses, shops, government officials, and sensitive receptors identified by the EJ Report.
- Cooperated with La Grande Spanish radio station to prepare a 30-second ad to run six times per day for two weeks.
- The ad with La Grande included weekly Facebook chats with a DEQ representative on their Facebook broadcasts for two weeks.

10. Conclusions, Comments, and Recommendations:

After consideration of the submitted public comments, no changes are recommended to the draft permit conditions. I recommend issuance of Air Permit No. 10745R00.