

INITIAL TITLE V AIR PERMIT APPLICATION REVIEW

Draft Document
XX

APPLICANT: Craven County Wood Energy Plant	SITE LOCATION: New Bern	COUNTY: Craven
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APPLICATION NUMBER: 2500158A5.A	EXISTING PERMIT NUMBER: 06419R15	NEW PERMIT NUMBER: 06419T16

I. Introduction

The U.S. Environmental Protection Agency (EPA) has given final approval to North Carolina's Title V operating permits program effective on October 1, 2001. This EPA approval triggered the requirements for Title V facilities to submit permit applications to the Division of Air Quality. Title V facilities are required to obtain an operating permit which addresses all applicable regulations under the State Implementation Plan and other provisions of the Clean Air Act (CAA). The Title V Operating Permit will define all of the facility's obligations under the CAA.

This Initial Title V Air Permit Application Review intends to convey all pertinent emissions data, rules, policies, and engineering assumptions used to construct the Title V operating permit. The primary source of information used to construct the permit is the above referenced air permit application.

II. Background Information

The Title V Operating Permit replaces the existing Air Quality Construction and Operation Permit No. 06419R15, issued on July 12, 2001, and currently scheduled to expire on October 31, 2003.

Pursuant to 15A NCAC 2Q .0506, Craven County Wood Energy Plant submitted its initial Title V application to the Division of Air Quality on August 2, 1996. The application was considered complete for processing on September 25, 1996. The draft permit was noticed to the public pursuant to 15A NCAC 2Q .0521 on XX, 2003.

The facility is not subject to the MACT requirements as total potential emissions of all hazardous air pollutants do not exceed 25 tons per year and emissions of individual hazardous air pollutants do not exceed 10 tons/year.

The existing permit (Air Permit No. 06419R15) includes provisions that specify emission limits and monitoring and reporting requirements that will be utilized to comply with Prevention of Significant Deterioration (PSD) requirements.

III. Facility Description

Craven County Wood Energy Plant (CCWEP) generates electricity from the combustion of wood wastes. Steam generated in the 666 million BTU/hr rated capacity spreader-stoker boiler is used to operate a Mitsubishi Heavy Industries turbine/generator, which produces up to 45MW of electricity for sale to

CP&L. It takes an additional 3MW to operate the plant; thus maximum capacity is right at 48MW. The exhaust air from the combustion is routed through a mechanical multi-cyclone dust collector and then through an electrostatic precipitator. CCWEP may combust a maximum of 50% railroad ties / plywood trimmings / particle board / wood sludge (cellulose) / brooder house poultry waste (10% maximum by weight), a minimum of 80% clean wood (by weight), a maximum of 10% (capacity factor) propane / natural gas and a maximum of 3,000 gallons of used No. 4 equivalent fuel oil.

IV. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. The most recent facility inspection was performed February 18, 2002. No compliance issues have been noted.

The applicant has certified that the facility will be in compliance with all applicable requirements. The applicant has also certified that the facility will be in compliance with any applicable requirements taking effect during the term of the permit and will meet such requirements on a timely basis.

V. Summary of Emission Sources and Control Devices

The following table identifies all emission sources and associated control devices including those for which the Initial Title V Operating Permit is being issued.

Emission Source ID No.	Emission Source Description	Principal Pollutants Emitted	Control Device ID No.	Control Device Description	Emission Point ID No.
F3A PSD	Cooling Tower	Particulate matter	N/A	None	F3A-1
F6A-1 PSD	Bottom Ash Handling System	Particulate matter	N/A	None	F6A-1
F6A-2 PSD	Fly Ash Handling System	Particulate matter	N/A	None	F6A-2
ES5A NSPS PSD	Wood Waste (clean wood, railroad ties (50% maximum by weight), plywood trimmings, particle board, Weyerhaeuser sludge, brooder house poultry waste (10% maximum by weight)/natural gas/propane/used oil-fired boiler - 666	Sulfur dioxide Particulate matter Carbon monoxide Nitrogen oxides Volatile organic compounds	CD5A-1 CD5A-2	Multi-cyclone with 330 nine (9)-inch tubes Research-Cottrell Electrostatic Precipitator (Model No. C100460) with 122,000 square feet of collection plate area	ES5A-1
Not provided	Diesel-fired Fire Pump - 250 horsepower	Sulfur dioxide Particulate matter Carbon monoxide Nitrogen oxides Volatile organic compounds	N/A	None	Not provided

Not provided	Diesel-fired Emergency Generator - 175 kw	Sulfur dioxide Particulate matter Carbon monoxide Nitrogen oxides Volatile organic compounds	N/A	None	Not provided
Not provided	Storage tanks for sulfuric acid, polymer, fuel oil, and gasoline (tanks range in size from 55 gallons to 4000 gallons)	Sulfuric Acid Volatile organic compounds	N/A	None	Not provided
Not provided	Propane storage tank 14,000 gallon capacity	Volatile organic compounds	N/A	None	Not provided
Wood Storage and Handling					
Not provided	Hammer mill	Particulate matter	N/A	None	Not provided
F1A PSD	Wood unloading from truck dumper	Particulate matter	N/A	None	F1A-1
F2A-1 PSD	Wood Reclaim Conveyor	Particulate matter	N/A	None	F2A-1
F2A-2 PSD	Wood unloading onto Wood Storage Pile	Particulate matter	N/A	None	F2A-2
F2A-3 PSD	Traffic on wood storage pile	Particulate matter	N/A	None	F2A-3
F2A-4 PSD	Wind erosion from the wood storage pile	Particulate matter	N/A	None	F2A-4

VI. Emission Source-by-Source Evaluation

A. Craven County Wood Energy Plant

1. Description

The process rates for the units that comprise the Craven County Wood Energy Plant are as follows:

Emission Source	Emission Source ID No.	Maximum Process Rate ¹
Cooling Tower	F3A PSD	2.4 million gallons/hour

Bottom Ash Handling System	F6A-1 PSD	29 tons/hour
Fly Ash Handling System	F6A-2 PSD	2 tons/hour
Wood Waste (clean wood, railroad ties (50% maximum by weight), plywood trimmings, particle board, Weyerhaeuser sludge, brooder house poultry waste (10% maximum by weight)/natural gas/propane/used oil-fire boiler bBoiler - (clean	ES5A NSPS PSD	666 million Btu/hour maximum firing rate
Diesel-fired Fire Pump ²	N/A	250 horsepower
Diesel-fired Emergency Generator ²	N/A	175 kilowatt
Storage tanks for sulfuric acid, polymer, fuel oil, gasoline, and propane ²	N/A	Not provided
Wood Storage and Handling		
Wood unloading from truck dumper	F1A PSD	114 tons/hour
Hammermill ³	Not provided	Not provided
Wood Reclaim Conveyor	F2A-1 PSD	152 tons/hour
Wood unloading onto Wood Storage Pile	F2A-2 PSD	152 tons/hour
Traffic on wood storage pile	F2A-3 PSD	152 tons/hour
Wind erosion from the wood storage pile	F2A-4 PSD	152 tons/hour

¹ Permit Application (August 2, 1996) Section B

² Identified in Insignificant Activities Summary in permit application (August 2, 1996) Section E2

³ Not included in permit or in application. Identified from site plan.

Comments:

1. Diesel-fired fire pump and emergency generator cannot be considered as insignificant activities as potential emissions of nitrogen dioxide from each unit exceed 5 tons per year.

sulfur dioxide	<p style="text-align: center;">Draft Document</p> <p>2.3 pounds per million Btu heat input</p> <p>Affected facilities:</p> <p>8. Fire pump (ID No. not provided)</p> <p>9. Emergency generator (ID No. not provided)</p> <p>Note limits and discussion in Section VI.A.3.d</p>	15A NCAC 2D .0516(a)
nitrogen dioxide	<p>0.8 pounds per million Btu heat input</p> <p>Affected facility:</p> <p>10. Wood Waste-Fired Boiler (ID No. ES5A)</p> <p>Note limits and discussion in Section VI.A.3.e</p>	15A NCAC 2D .0519(b)
visible emissions	<p>20 percent opacity</p> <p>Note limits and discussion in Section VI.A.3.f</p>	15A NCAC 2D .0521(d)
particulate matter nitrogen dioxide visible emissions	<p>0.10 lbs per million Btu heat input particulate matter</p> <p>Annual capacity factor for natural gas shall not exceed 10 percent (0.10)</p> <p>20 percent opacity</p> <p>Affected facility:</p> <p>11. Wood Waste-Fired Boiler (ID No. ES5A)</p> <p>Note limits and discussion in Section VI.A.3.g</p>	15A NCAC 2D .0524 (40 CFR 60.40b, Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (60.40b--60.49b))
particulate matter volatile organic compounds visible emissions nitrogen dioxide carbon monoxide	<p>For PSD purposes, "Best Available Control Technology" (BACT) permit limitations shall not be exceeded.</p> <p>Affected facilities:</p> <p>12. Wood Waste-Fired Boiler (ID No. ES5A)</p> <p>13. Wood unloading from truck dumper (ID No. F1A)</p> <p>14. Wood reclaim conveyor (ID No. F2A-1)</p> <p>15. Traffic on wood storage pile (ID No. F2A-3)</p> <p>16. Wood unloading onto storage pile (ID No. F2A-2)</p> <p>17. Wind erosion from wood storage pile (ID No. F2A-4)</p> <p>18. Bottom ash handling system (ID No. F6A-1)</p> <p>19. Fly ash handling system (ID No. F6A-2)</p> <p>20. Cooling tower (ID No. F3A)</p> <p>Note limits and discussion in Section VI.A.3.h</p>	15A NCAC 2D .0530
toxic air pollutants	<p>Permit limits for toxic air pollutants shall not be exceeded. See Section VII.B.2. Facility-wide Affected Emission Sources State-enforceable only.</p>	15A NCAC 2D .1100

odors	<p style="text-align: center;">Draft Document</p> Odorous emissions must be controlled - Section VII.B.3. Facility-wide Affected Emission Sources State-enforceable only	15A NCAC 2D .1806
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Other regulations considered for emissions from the Craven County Wood Energy Plant:

- C 15A NCAC 2D .2100: Risk Management Program. Sulfuric acid was not listed as a regulated substance in 40 CFR 68.130 as a substance for which a risk management program is required. Thus facility is not subject to requirements. Tanks storing fuel for usage at the facility are not subject to requirements.
- C 40 CFR 68: Chemical Accident Prevention Provisions. Sulfuric acid was not listed as a regulated substance in 40 CFR 68.130. Thus sulfuric acid storage area is not subject to requirements. Tanks storing fuel for usage at the facility are not subject to requirements.

Comments:

- C An alternative operating scenario (AOS) is in use for the wood waste boiler (**ID No. ES5A**). Although the boilers primarily utilize wood waste, the boilers are also capable of burning natural gas/propane and used oil. When the boilers are burning natural gas, or used oil, the applicable requirements for particulate emissions are prescribed in 15A NCAC 2D .0503: Particulates from Fuel Burning Indirect Heat Exchangers. When the boiler are burning wood wastes, the applicable requirements for particulate emissions are prescribed in 15A NCAC 2D .0504: Particulates from Wood Burning Indirect Heat Exchangers.

3. Specific requirements and affected emission points

AOS -firing natural gas, propane, or used oil
a. 15A NCAC 2D .0503: Particulates from Fuel Burning Indirect Heat Exchangers

Statement of Basis

- (a) The emission limits for particulate matter from the fuel burning indirect heat exchangers (i.e., the wood waste boiler) were not prescribed in the Air Permit No. 06419R15.
- (b) For the wood waste boiler (**ID No. ES5A**) which burns a combination of wood waste, used oil, natural gas and propane, emissions will be controlled by a multi-cyclone in series with an electrostatic precipitator.
- (c) This regulation applies only when the wood waste boiler is burning used oil, natural gas, or propane. When these fuels are used in the boiler minimal emissions of particulate matter are expected and no monitoring, recordkeeping, or reporting will be necessary.

Regulatory Requirements

- iv. Alternative Operating Scenarios: The Permittee, contemporaneously with making a change from one alternate operating scenario to another, shall record in a log the scenario under which it is operating.
- v. The allowable emissions of particulate matter shall be calculated by the equation $E = 1.090 \times Q$ to the -0.2594 power. E = allowable emission limit in lb/million Btu. Q = maximum heat input in million Btu/hour (See 15A NCAC 2D .0503(c)). Emissions of particulate matter from the combustion of natural gas or propane as discharged from each indirect heat exchanger into the atmosphere shall not exceed the following limitations:

<u>Source</u>	<u>Emission Limit</u>	<u>Maximum Firing Rate</u>	<u>Allowable Emission Rate</u>	<u>Potential Emissions</u>
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Monitoring/ Recordkeeping

- vi. No monitoring, record keeping, or reporting is required for particulate emissions from the firing of used oil, natural gas, and propane in the wood waste boiler (**ID No. ES5A**).

b. POS -firing wood in combination with natural gas, propane, or used oil
15A NCAC 2D .0504: Particulates from Wood Burning Indirect Heat Exchangers

Statement of Basis

- i. The emission limit for particulate matter from the wood burning indirect heat exchangers (i.e., the boiler) were not prescribed in the Air Permit No. 06419R15.
- ii. For the Wood Waste Boiler (ID No. ES5A) which burns a varying combination of wood products, used oil, wood waste, brooder house poultry waste (i.e., wood shavings), natural gas, and propane, a multi-cyclone (**ID No. CD5A-1**), connected in series with an electrostatic precipitator (**ID No. CD5A-2**), is used to remove particulate matter from the gas stream.
- iii. When burning used oil, natural gas, or propane and no wood, the emission limits for the facility are prescribed in 15A NCAC 2D .0503.
- iv. The allowable emissions of particulate matter shall be calculated by the equation $E = 1.1698 \text{ times } Q \text{ to the } -0.2230 \text{ power}$. E = allowable emission limit in lb/million Btu. Q = maximum heat input in million Btu/hour (See 15A NCAC 2D .0504(c)). For the wood waste boiler (**ID No. ES5A**), the value Q is 666 million Btu/hour. The value for “E” is calculated to be 0.274 lb/million Btu.

Regulatory Requirements

- v. Alternative Operating Scenarios: The Permittee, contemporaneously with making a change from one alternate operating scenario to another, shall record in a log the scenario under which it is operating.
- vi. The emission limit for fuel burning equipment that burns both wood and other fuels in combination, or for wood and other fuel burning equipment that is operated such that emissions are measured on a combined basis, shall be calculated by the equation

$$E_c = [(E_w)(Q_w) + (E_o)(Q_o)]/Q_t \text{ (See 15A NCAC 2D .0504(f)).}$$

- (a) E_c = the emission limit for combination or combined emission source(s) in lb/million Btu.
- (b) E_w = plant site emission limit for wood only as determined by this rule in lb/million Btu. (For this facility, $E_w = 0.274$ lb/million Btu.)
- (c) E_o = the plant site emission limit for other fuels only as determined by 15A NCAC 2D .0503 in lb/million Btu. (For this facility, $E_o = 0.202$ lb/million Btu [from Section VI.A.3.a.iv])
- (d) Q_w = the actual wood heat input to the combination or combined emission sources in Btu/hour
- (e) Q_o = the actual other fuels heat input to the combination or combined emission sources in Btu/hr.
- (f) $Q_t = Q_w + Q_o$ and is the actual total heat input to combination

Emissions of particulate matter from the combustion of wood products, only, as discharged from each indirect heat exchanger into the atmosphere shall not exceed the following limitations:

<u>Source</u>	<u>Pollutant</u>	<u>Emission Limit</u>	<u>Maximum Firing Rate</u>	<u>Allowable Emission Rate</u>
Boiler (ID No. ES5A)	Particulate matter	0.274 lbs/mmBtu	666 million Btu/hour	183. lbs/hour

Monitoring and Recordkeeping Requirements

- vii. Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limit above by testing the waste wood fuel-fired Boiler (ID Nos. ES5A) for particulate matter with a testing protocol approved by the DAQ. Details of the emissions testing and reporting requirements can be found in Section 3 - General Condition JJ. Testing shall be completed and the results submitted within one year of following the effective date of the permit or by ~~Xxx, xx, 2004~~, unless an alternate date is approved by the DAQ. Thereafter the testing shall be performed every 4 years. If the results of this test are above the limit given in Section VI.A.3.b.vi., above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0504.
- viii. To comply with the provisions of the permit and ensure compliance with the limitations prescribed in 15A NCAC 2D .0504(c), the Permittee shall establish an inspection and maintenance schedule/checklist and perform such inspections and maintenance on the indirect heat exchangers on the wood waste boiler (ID No. ES5A). As a minimum, the inspection and maintenance program will include a monthly inspection of the indirect heat exchangers, boilers, fans, and duct work for leaks and to ensure structural integrity. In addition, Permittee shall perform maintenance and cleaning at least once per year. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0504 if the indirect heat exchangers are not inspected, cleaned, and maintained.
- ix. Particulate matter emissions from the wood waste boiler (ID No. ES5A) shall be controlled by a multi-cyclone (ID No. CD5A-1), which has 330 nine (9) inch tubes, in series with an electrostatic precipitator (ID No. CD5A-2) which has 122,000 square feet of collection plate area. To ensure compliance and effective operation, the Permittee shall perform inspections and maintenance as recommended by the manufacturers. In addition to the manufacturers' inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendation, as a minimum, the inspection and maintenance requirement shall include:
 - (a) a monthly external visual inspection of critical components of the electrostatic precipitator such as rappers, ash removal equipment, the system duct work, and the material collection units.
 - (b) a weekly check for any equipment that does not generate an alarm in the turned-off state, to ensure it is switched on; and
 - (c) an annual internal inspection of the multi-cyclone's structural integrity.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0504 if the multi-cyclone, the electrostatic precipitator, and duct work are not inspected and maintained.

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- x. The results of inspection and maintenance activities, discussed above for the electrostatic precipitator, shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative of DAQ upon request. The logbook shall record the following:
 - (a) the date of each recorded action;
 - (b) the results of each inspection; and
 - (c) corrective actions taken.

Reporting

- xiii. The Permittee shall submit the results of any maintenance performed on the multi-cyclone (**ID No. CD5A-1**), the electrostatic precipitator (**ID No. CD5A-2**), and the wood waste boiler (**ID No. ES5A**) within 30 days of a written request by the DAQ.
- xiv. The Permittee shall submit a summary report of monitoring and record keeping activities by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified. All instances of deviations from the manufacturers' recommendations for maintenance of the multi-cyclone and the electrostatic precipitator must also be clearly identified.

c. 15A NCAC 2D .0515: Particulate Emissions from Miscellaneous Industrial Processes

Statement of Basis

- iv. The methods for calculating the emission limits for particulate matter were not prescribed in Air Permit No. 06419R15.
- v. This emission limitation does not apply to the fugitive emissions associated with wood storage, i.e., wood unloading from truck dumper (**ID No. F1A**), wood unloading onto wood storage pile (**ID No. F2A-2**), traffic on wood storage pile (**ID No. F2A-3**), and wind erosion from the wood storage pile (**ID No F2A-4**).
- vi. Hammer mill is housed in an enclosed structure. Unit was not listed or described in application or in existing permit. Unit is shown on site plan which was part of permit application.
- vii. In the application, the Permittee indicated that the emission points are routinely checked for leaks and to ensure that the units are in good operating condition.
- viii. Stack testing is not required to ensure compliance with this regulation. However the test method condition will be put in the permit in the event that DAQ or EPA finds that due to improper operation, violations, etc., source testing is required. Testing requirements are specified in 2D .0501(c).

Regulatory Requirements

- vi. Emissions of particulate matter that are discharged into the atmosphere shall not exceed an allowable emission rate as calculated by the following equation: [15A NCAC 2D .0515(a)].

$$E = 4.10 \times P^{0.67} \quad \text{for units with process weight rate less than 30 tons per hour}$$

Where E = allowable emission rate in pounds per hour calculated to

or $E=55.0(P)^{11} - 40$ for units with process weight rates greater than 30 tons per hour
 Where E = allowable emission rate in pounds per hour calculated to three significant figures
 P = process weight rate in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight. In no case shall the following emission limitations be exceeded:

<u>Source</u>	<u>Pollutant</u>	<u>Process Weight Rate</u>	<u>Emission Limit</u>	<u>Emissions after Controls</u>
Bottom Ash Handling System (ID No. F6A-1)	Particulate matter	29 tons/hour	39.1 lbs/hour	0 lbs/hour
Fly Ash Handling System (ID No. F6A-2)	Particulate matter	2 tons/hour	6.21 lbs/hour	0 lbs/hour
Wood Reclaim Conveyor (ID No. F2A-1)	Particulate matter	152 tons/hour	55.6 lbs/hour	0.08 lbs/hour
Hammer mill (ID No. not provided)	Particulate matter	Not provided	Not provided	Not provided

Monitoring/Record keeping

- vii. Bottom ash and fly ash shall be conveyed in the ash handling systems (**ID Nos. F6A-1 and F6A-2**) and the wood waste shall be conveyed from the hammermill (**ID No. Not provided**) in the wood reclaim conveyor (**ID No. F2A-1**) to storage areas via enclosed systems such that emissions are minimized. For particulate emissions, the Permittee shall utilize the following dust suppression techniques:
 - (a) water quenching of bottom ash after discharge from the grate of the boiler;
 - (b) enclosed dust collectors and water suppression system on fly ash handling system (**ID No. F6A-2**), and
 - (c) partial enclosed conveyors and transfer towers wherein all transfer points are closed, on the wood reclaim conveyor (**ID No. F2A-1**).
- viii. To comply with the provisions of the permit and ensure compliance with the limitations prescribed in 15A NCAC 2D .0515, the Permittee shall establish an inspection and maintenance schedule/checklist and perform such inspections and maintenance on the ash handling systems (**ID Nos. F6A-1 and F6A-2**), the hammer mill (**ID No. not provided**), and the wood reclaim conveyor (**ID No. F2A-1**) as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include:
 - (a) a monthly external inspection of the enclosed work area around the hammermill, enclosed conveyors, and transfer towers to ensure that covers are properly fitted;
 - (b) a monthly external inspection of the bottom ash system to ensure structural integrity; and
 - (c) a monthly external inspection of the water spray dust suppression system on the fly ash handling system.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ash handling systems, the hammer mill and the wood reclaim conveyor are not inspected and maintained.

- ix. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- (a) the date of each recorded action;
 - (b) the results of each inspection; and
 - (c) the results of any maintenance performed on the ash handling systems, the hammer mill, and the wood reclaim conveyor.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not maintained.

Reporting

- x. The Permittee shall submit the results of any maintenance performed on the ash handling systems (**ID Nos. F6A-1 and F6A-2**), the hammer mill, and the wood reclaim conveyor (**ID No. F2A-1**) within 30 days of a written request by the DAQ.
- xi. The Permittee shall submit a summary report of monitoring and record keeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

d. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

Statement of Basis

- ix. The existing permit does not include a sulfur dioxide emission limit.
- x. This regulation does not apply to the wood waste boiler (**ID No. ES5A**) as the unit is subject to requirements of 15A NCAC 2D .0524.
- xi. Units at the facility burn diesel fuel. Minimal emissions of sulfur dioxide are expected as the sulfur content of the fuel is very low.

Regulatory Requirements

- iv. Emissions of sulfur dioxide from the diesel fuel-fired fire pump and the diesel fuel-fired emergency generator (**ID nos. not provided**) shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516(a)]. Emissions of sulfur dioxide from the combustion of diesel fuel as discharged from the following emission points shall not exceed the following limitations:

<u>Source</u>	<u>Emission Limit</u>	<u>Maximum Firing Rate</u>	<u>Allowable Emission Rate</u>	<u>Potential Emissions</u>
Fire pump	2.3 lbs/million Btu	250 horsepower (0.64 million Btu/hour)	1.46 lbs/hour	Not provided
Emergency generator	2.3 lbs/million Btu	175 kilowatt (0.6 million Btu/hour)	1.38 lbs/hour	Not provided

Monitoring/Record Keeping/Reporting

- v. No monitoring, record keeping, or reporting is required for sulfur

e. 15A NCAC 2D .0519: Control of Nitrogen Dioxide and Nitrogen Oxides Emissions

Statement of Basis

- i. Emission limits for nitrogen oxides were not prescribed in Air Permit No. 06419R15.
- ii. As the boiler has a capacity of 666 million Btu/hour and is capable of burning gas, the Permittee is subject to Section (b)(1) of this regulation.
- iii. Wood waste is the primary fuel in use at the boiler. Natural gas and propane are used for start up and are not used during routine operations. Only the used or used oil generated on site may be used in the boiler and then only as a supplemental fuel.
- iv. As estimated potential emissions of nitrogen oxide from the combustion of used oil (0.32 lbs/million Btu) and natural gas/propane (0.19 lbs/million Btu) as calculated using AP-42 emission factors, are significantly less than the allowable limits, no monitoring, record keeping, or reporting is necessary.

Regulatory Requirements

- v. Emissions of nitrogen oxides shall not exceed 0.8 pounds per million Btu of heat input from any oil or gas-fired boiler with a capacity of 250 million Btu per hour or more

Monitoring/Record Keeping/Reporting

- vi. No monitoring, record keeping, or reporting is required for emissions of nitrogen oxide or nitrogen dioxide from the firing of used oil, natural gas, and propane in the wood waste boiler (**ID No. ES5A**).

f. 15A NCAC 2D .0521: Control of Visible Emissions

Statement of Basis

- i. Emission limits for visible emissions were not prescribed in Air Permit No. 06419R15.
- ii. The visible emissions limits for the boiler are prescribed in 15A NCAC 2D .0524

Regulatory Requirements

- iii. As required by 15A NCAC 2D .0521(d) "Control of Visible Emissions," visible emissions from sources manufactured after July 1, 1971, shall not be more than 20 percent opacity when averaged over a six-minute period [15A NCAC 2D .0521(d)]. However, six minute averaging periods may exceed 20 percent opacity if:
 - (a) No six-minute period exceeds 87 percent opacity;
 - (b) No more than one six-minute period exceeds 20 percent opacity in any hour; and
 - (c) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period

Monitoring/Recordkeeping

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- v. To ensure compliance, the Permittee shall observe, on a weekly basis, the emission points listed in Section VI.A.3.f.iv., above, for any visible emissions above normal. The Permittee shall establish “normal” for the source in the first 30 days following the effective date of the permit. If visible emissions are observed to be above normal, the Permittee shall either:
 - (a) be deemed to be in noncompliance with 15A NCAC 2D .0521 or
 - (b) demonstrate that the visible emissions from the emission points listed in Section VI.A.3.f.iv., above, in accordance with 15A NCAC 2D .0501(c)(8), do not exceed 20 percent opacity. If the demonstrations in (b) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.
 - vi. The results of the monitoring for visible emissions shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. To ensure quality, entries in the logbook should be signed by personnel responsible for the effective operation of the sources and their air pollution control devices. The logbook shall record the following:
 - (a) the date of each recorded action;
 - (b) the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - (c) the results of any corrective actions performed.The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting

- vii. The Permittee shall submit a summary report of monitoring and record keeping activities by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

- g. **15A NCAC 2D .0524: New Source Performance Standards (also see Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units as promulgated in 40 CFR Part 60 (60.40b--60.49b))**

Statement of Basis

- i. New source performance standards for the wood waste boiler (**ID No. ES5A**) were listed in Air Permit No. 06419R15 (Specific Conditions and Limitations No. 3).
- ii. As indicated in 40 CFR 60.40b(a), The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour). The units were placed in operation in 1990.
- iii. The unit burns wood, natural gas, and propane. No coal is combusted in the units.
- iv. The wood waste boiler (**ID No. ES5A**) is rated at 666 million Btu/hour. Particulate emissions from the boiler are controlled by a multi-cyclone followed by an electrostatic precipitator. A continuous opacity monitor

- has been installed to monitor visible emissions.
- v. Permittee has chosen to demonstrate compliance with the emission limits for nitrogen oxides by ensuring that the annual capacity factors for natural gas/propane and used oil are less than 10 percent as provided in 40 CFR 60.44b(d)

Regulatory Requirements

- vi. As specifically stated in 40 CFR 60.43b(c): "... no owner or operator of an affected facility that combusts wood, or wood with other fuels, except coal, shall cause to be discharged from that affected facility any gases that contain particulate matter in excess of 0.10 lb/million Btu heat input if the affected facility has an annual capacity factor greater than 30 percent (0.30) for wood."
- vii. As specifically stated in 40 CFR 60.43b(f): "... no owner or operator of an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity."
- viii. As specifically stated in 40 CFR 60.44b(d): "... no owner or operator of an affected facility that simultaneously combusts natural gas with wood, municipal-type solid waste, or other solid fuel, except coal, shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 0.30 lb/million Btu heat input unless the affected facility has an annual capacity factor for natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas.
- ix. As specifically stated in 40 CFR 60.46b(a): "The particulate matter emission standards and opacity limits under § 60.43b apply at all times except during periods of startup, shutdown, or malfunction. The nitrogen oxides emission standards under § 60.44b apply at all times.
- x. Terms used throughout this segment [Section VI.A.3.g] are defined in the Clean Air Act as amended in 1990 and in 40 CFR 60.2 and 60.41b.

Monitoring/Recordkeeping

- xi. Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limits, above by testing the wood waste boiler (**ID No. ES5A**) for particulate matter utilizing EPA Reference Method 5, 40 CFR 60, Appendix A and in accordance with a testing protocol approved by the Division of Air Quality. At least forty-five (45) days prior to performing any required emissions testing, the Permittee must submit two copies of the testing protocol to the Regional Supervisor, Division of Air Quality for review and approval. All testing protocols must be approved by the DAQ prior to performing such tests. The source shall be responsible for ensuring, within the limits of practicality, that the equipment or process being tested is operated at or near its maximum normal production rate (Normal and permitted operation of the boiler is with all three precipitator fields operating as specified in the original application), or at a lesser rate if specified by the Director or his delegatee. To afford the Regional Supervisor, Division of Air Quality, the opportunity to have an observer present, the Permittee shall provide the Regional Office in writing, at least fifteen (15) days notice of any required performance test(s). Details of the emissions testing and reporting requirements can be found in Section 3

- General Condition JJ of the permit. Testing shall be completed and the results submitted by one year from the date of permit issuance, unless an alternate date is approved by the DAQ. Thereafter the testing shall be performed on an annual basis. If the results of this test for particulate matter are above the limits identified in Section VI.A.3.g.viii., above (or 0.10 lb/million Btu heat input), the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524.

xii. The results of inspection and maintenance activities, discussed above for the electrostatic precipitator, shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative of DAQ upon request. The logbook shall record the following:

- (a) the date of each recorded action;
- (b) the results of each inspection; and
- (c) corrective actions taken.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if these records are not maintained.

xix. In addition to any other record keeping requirements of the Environmental Protection Agency (EPA), the Permittee is required to maintain records as follows:

- (a) the Permittee shall record and maintain records of the quantities of wood and natural gas/propane combusted each day and
- (b) all records and calculations required under this section shall be maintained by the Permittee for a period of two years following the date of such record.

The record of the amounts of fuel combusted during each day shall be made available to an authorized representative of DAQ upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the amounts of fuel combusted during each day are not recorded.

xx. At the end of each calendar month, the Permittee shall calculate the annual capacity factor individually for each type of fuel used in the boiler (wood, natural gas/propane). The annual capacity factor shall be determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity. The annual capacity factor shall be determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the annual compliance factor for each fuel burned during the previous month is not determined and recorded.

xxi. To ensure compliance for emissions of nitrogen oxides, the Permittee shall evaluate on a monthly basis, the annual capacity factor for propane/natural gas and used oil to assure that such factors do not exceed 10 percent. If the annual capacity factors for propane/natural gas and used oil are observed to exceed 10 percent, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0524.

xxii. To ensure compliance and the effective operation of the boiler and its electrostatic precipitator (**ID No. CD5A-2**), the Permittee shall continuously monitor and record, visible emissions. A continuous emissions monitor for the opacity of emissions shall be installed,

calibrated, maintained, tested, and operated, taking into account manufacturer's specifications, in accordance with 40 CFR Part 60 Appendix B "Performance Specifications" and Appendix F "Quality Assurance Procedures." The readings shall be electronically recorded in a log book, maintained on-site, and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the monitoring device is not calibrated, operated, and maintained using procedures that take into account manufacturer's specifications and in accordance with 40 CFR Part 60 Appendix B "Performance Specifications" and Appendix F "Quality Assurance Procedures.". The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the monitoring records are not maintained.

The results of the monitoring for visible emissions shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

- (a) the date and time of each recorded action;
- (b) the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
- (c) the results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if these records are not maintained.

Reporting

xxviii. In addition to any other reporting required by 40 CFR 60.49b or notification requirements to the EPA, the Permittee shall provide to the DAQ in **writing** the following:

- (a) any excess opacity emission reports as measured by the continuous emission monitor (CEM), by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year of each calendar year for the preceding six-month period between January and June. If there are no excess emissions during the calendar quarter, the Permittee shall submit a statement indicating that no excess emissions occurred during the reporting period;
- (b) three (3) copies of any performance test results for emissions of particulate matter from the wood waste boiler shall be submitted to the Regional Supervisor, Division of Air Quality, in accordance with the approved procedures of the Environmental Management Commission within forty-five (45) days after testing.

xxix. For compliance purposes, within thirty (30) days after each calendar year quarter the following shall be reported to the Regional Supervisor, Division of Air Quality:

- (a) By month, the total weight of clean wood, railroad ties, plywood trimmings, particle board, waste sludge (wood cellulose) and brooder house poultry waste purchased for the boiler. Calculate each wood fuel as a percent by weight of total wood purchased.
- (b) A certification from the poultry waste supplier that all poultry

waste supplied was from brooder houses only. In addition, the Permittee shall certify that all brooder house poultry waste combusted at this facility was furnished by this supplier.

- xxx. The Permittee shall submit a summary report of monitoring and record keeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

h. 15A NCAC 2D .0530: Prevention of Significant Deterioration

Statement of Basis

- iv. Requirements regarding “prevention of significant deterioration” for the affected emission points were prescribed in Air Permit No. 06419R15 (Specific Conditions and Limitations No. 2).
- v. For particulate matter emissions from the boiler, a multi-cyclone followed by an electrostatic precipitator are used to meet the BACT requirements. For visible emissions from the ash handling systems, wet suppression is used. Enclosures and dust suppression techniques are utilized to reduce particulate emissions from the wood storage and handling facilities.
- vi. It should be noted that the limit for PSD of 0.35 lbs/million Btu heat input exceeds the NSPS requirement of 0.30 lbs/million Btu heat input as prescribed in 40 CFR 60.44b(d). This is appropriate for this facility as the boiler is subject to the NSPS requirement that the annual capacity factor for natural gas shall not exceed 10 percent rather than the emission limit of 0.30 lbs/million Btu.
- vii. No additional controls were identified for emissions of carbon monoxide and volatile organic compounds from the wood fired boiler.
- viii. For visible emissions from the wood fired boiler, an electrostatic precipitator is utilized to control emissions of particulate matter (the pollutant that makes up the visible emissions). An opacity monitor is in operation to continuously monitor visible emissions. No opacity limitations were prescribed as BACT in the current permit for the boiler.

Regulatory Requirements

- vi. For PSD purposes, the following "Best Available Control Technology" (BACT) permit limitations shall not be exceeded:

Source	Pollutants	Emission Limits
Wood Waste Boiler (ID No. ES5A)	PM/PM ₁₀	0.041 lbs/million Btu heat input
	Volatile Organic Compounds	0.077 lbs/million Btu heat input
	Carbon Monoxide	0.66 lbs/million Btu
	Nitrogen Oxides	0.35 lbs/million Btu
Wood unloading from truck dumper (ID No. F1A)	PM/PM ₁₀	0.09 pounds per year
Wood reclaim conveyor (ID No. F2A-1)	PM/PM ₁₀	23.1 pounds per year

Source	Pollutants	Emission Limits
Traffic on wood storage pile (ID No. F2A-3)	PM/PM ₁₀	430.3 pounds per year
Wood unloading onto storage pile (ID No. F2A-2)	PM/PM ₁₀	0.40 pounds per year
Wind erosion from wood storage pile (ID No. F2A-4)	PM/PM ₁₀	258.1 pounds per year
Bottom ash handling system (ID No. F6A-1)	Opacity	0 percent
Fly ash handling system (ID No. F6A-2)	Opacity	0 percent
Cooling tower (ID No. F3A)	PM/PM ₁₀	Drift Guarantee 0.005 percent

Monitoring/Recordkeeping for Emissions of Particulate Matter From the wood waste boiler

- vii. Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limits, above by testing the wood waste boiler (ID No. ES5A) for particulate matter utilizing EPA Reference Method 5, 40 CFR 60, Appendix A and in accordance with a testing protocol approved by the Division of Air Quality. At least forty-five (45) days prior to performing any required emissions testing, the Permittee must submit two copies of the testing protocol to the Regional Supervisor, Division of Air Quality for review and approval. All testing protocols must be approved by the DAQ prior to performing such tests. The source shall be responsible for ensuring, within the limits of practicality, that the equipment or process being tested is operated at or near its maximum normal production rate (Normal and permitted operation of the boiler is with all three precipitator fields operating as specified in the original application), or at a lesser rate if specified by the Director or his delegatee. To afford the Regional Supervisor, Division of Air Quality, the opportunity to have an observer present, the Permittee shall provide the Regional Office in writing, at least fifteen (15) days notice of any required performance test(s). Details of the emissions testing and reporting requirements can be found in Section 3 - General Condition JJ of the permit. Testing shall be completed and the results submitted by **(One year from date of issuance) xxxxx, 2004**, unless an alternate date is approved by the DAQ. Thereafter the testing shall be performed on an annual basis. If the results of this test for particulate matter are above the limits identified in Section VI.A.3.h.vi., above (or 0.041 lb/million Btu heat input), the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530.
- viii. Particulate matter emissions from the wood waste boiler (ID No. ES5A) shall be controlled by a multi-cyclone (ID No. CD5A-1), which has 330 nine (9) inch tubes, in series with an electrostatic precipitator (ID No. CD5A-2) which has 122,000 square feet of collection plate area. To ensure compliance and effective operation, the Permittee shall perform inspections and maintenance as recommended by the manufacturers. In addition to the manufacturers' inspection and maintenance recommendations, or if there is no manufacturer's inspection and

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maintenance recommendation, as a minimum, the inspection and maintenance requirement shall include:

- (a) a monthly external visual inspection of critical components of the electrostatic precipitator such as rappers, ash removal equipment, the system duct work, and the material collection units.
- (b) a weekly check for any equipment that does not generate an alarm in the turned-off state, to ensure it is switched on; and
- (c) an annual internal inspection of the multi-cyclone's structural integrity.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the multi-cyclone, the electrostatic precipitator, and duct work are not inspected and maintained.

- ix. The results of inspection and maintenance activities, discussed above for the electrostatic precipitator, shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative of DAQ upon request. The logbook shall record the following:

- (a) the date of each recorded action;
- (b) the results of each inspection; and
- (c) corrective actions taken.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if these records are not maintained.

From the wood unloading from truck dumper (ID No. F1A), wood reclaim conveyor (ID No. F2A-1), traffic on wood storage pile (ID No. F2A-3), wood unloading onto storage pile (ID No. F2A-2), wind erosion from wood storage pile (ID No. F2A-4), and cooling tower (ID No. F3A)

- x. Emissions of particulate matter shall be controlled as follows:

- < For the truck dumper (ID No. F1A), wood deliveries shall be made in a covered truck and discharged into one of two hydraulic dumpers equipped with sidewall curtains.
- < The wood reclaim conveyor (ID No. F2A-1) shall be covered and all transfer points shall be enclosed.
- < The wood unloading onto storage pile (ID No. F2A-2) shall utilize enclosed telescoping chutes kept as close to receiving pile as possible when dumping.
- < For traffic on wood storage pile (ID No. F2A-3) and wind erosion from wood storage pile (ID No. F2A-4), the high moisture content of the stored wood and the coarse wood cover will be utilized to reduce fugitive emissions.

Monitoring/Recordkeeping for Emissions of Nitrogen Oxides, Volatile Organic Compounds and Carbon Monoxide

- < Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limits, above by testing the wood waste fired boiler (ID Nos. ES5A) for nitrogen oxides, volatile organic compounds and carbon monoxide in accordance with testing protocols approved by the DAQ. Details of the emissions testing and reporting requirements can be found in Section 3 - General Condition JJ of the permit. Testing shall be completed and the results submitted by **(one year from issuance) xxxxx, 2004**, unless an alternate date is approved by the DAQ. If the results of this test for volatile organic compounds emitted from this unit are above the limit identified in Section

VI.A.3.h.vi., above (or 0.077 lb/million Btu heat input for volatile organic compounds and 0.66 lbs/million Btu heat input for carbon monoxide), the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530.

Monitoring/Record keeping for Emissions of Visible Emissions For the Ash Handling System

- vi. To ensure compliance, the Permittee shall observe, on a weekly basis, the bottom ash handling system (**ID No. F6A-1**) and the fly ash handling system (**ID No. F6A-2**) for any visible emissions. If any visible emissions from the ash handling systems are observed, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0530.
- vii. The results of the monitoring for visible emissions shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. To ensure quality, entries in the logbook should be signed by personnel responsible for the effective operation of the ash handling system. The logbook shall record the following:
 - (a) the date and time of each recorded action;
 - (b) the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - (c) the results of any corrective actions performed.
 The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if these records are not maintained.

Reporting

- xxix. The Permittee shall submit a summary report of monitoring and recordkeeping activities within 30 days after each calendar year quarter, due and postmarked on or before January 30 of each calendar year for the preceding three-month period between October and December, April 30 of each calendar year for the preceding three-month period between January and March, July 30 of each calendar year for the preceding three-month period between April and June, and October 30 for the calendar year for the preceding three-month period between July and September.

VII. Facility-wide affected emission sources

A. Overview of Applicable Regulatory Requirements

The following table provides a summary of limits and standards applicable facility wide:

Regulated Pollutant	Limits/Standards	Applicable Regulation
toxic air pollutants	Permit limits for toxic air pollutants shall not be exceeded. See Section VII.B.1. Facility-wide Affected Emission Sources State-enforceable only .	15A NCAC 2D .1100
odors	odorous emissions must be controlled; State enforceable only	15A NCAC 2D .1806

B. Specific requirements and affected emission points

1. **15 A NCAC 2D .1100: Control of Toxic Air Pollutants (State only requirement)**

a. Pursuant to 15A NCAC 2D .1100 and in accordance with the approved application for an air toxic compliance demonstration, the following optimized permit limits (as established through approved modeling at 95% of each respective AAL) for emissions from the wood waste boiler shall not be exceeded:

<u>Toxic Pollutant</u>	<u>Optimized Allowable Limit</u>	<u>Toxic Pollutant</u>	<u>Optimized Allowable Limit</u>
Acetaldehyde	1.10E+05 lb/hr	Aziridine	2.91E+03 lb/day
Acetic Acid	1.51E+04 lb/hr	Carbon disulfide	9.02E+04 lb/day
Acrolein	3.26E+02 lb/hr	Chlorobenzene	1.07E+06 lb/day
Ammonia	1.10E+04 lb/hr	Di(2-ethylhexyl) phthalate	1.46E+04 lb/day
Aniline	4.08E+03 lb/hr	Dichlorodifluoro-methane	1.20E+08 lb/day
Benzyl chloride	2.04E+03 lb/hr	Dichlorofluoromethane	2.43E+05 lb/day
Bromine	8.15E+02 lb/hr	Dimethyl sulfate	1.46E+03 lb/day
Chlorine	3.67E+03 lb/hr	1,4 -dioxane	2.72E+05 lb/day
	1.82E+04 lb/day	Ethylenediamine	1.46E+05 lb/day
Chloroprene	1.43E+04 lb/hr	Hydrazine	2.91E+02 lb/day
	2.13E+05 lb/day	Manganese & compounds	1.50E+04 lb/day
Cresol	8.97E+03 lb/hr	Manganese cyclopentadienyl tricarbonyl	2.91E+02 lb/day
Ethyl acetate	5.71E+05 lb/hr	Manganese tetroxide	3.01E+03 lb/day
Ethyl mercaptan	4.08E+02 lb/hr	Mercury	2.91E+02 lb/day
Ethylene glycol mono-ethyl ether	4.89E+02 lb/hr	Mercury, alkyl	2.91E+02 lb/day
Ethylenediamine	1.02E+04 lb/hr	Mercury, aryl	2.91E+02 lb/day
Flourides	1.02E+03 lb/hr	n-Hexane	5.34E+05 lb/day
	7.76E+03 lb/day	Nickel carbonyl	2.91E+02 lb/day
Formaldehyde	6.12E+02 lb/hr	Nickel metal	2.91E+03 lb/day
Hexachlorocyclo-pentadiene	4.08E+01 lb/hr	Nickel, soluble	2.91E+02 lb/day
	2.91E+02 lb/day	Phosgene	1.21E+03 lb/day
Hexane isomers	1.47E+06 lb/hr	1,1,2,2-tetrachloro-1,2-difluoroethane	2.52E+07 lb/day
Hydrogen chloride	2.85E+03 lb/hr	1,1,2,2-tetrachloro-2,2-difluoroethane	2.52E+07 lb/day
Hydrogen cyanide	4.48E+03 lb/hr	Toluene-2,4-diisocyanate	9.70E+01 lb/day
	6.79E+04 lb/day	Trichloroethylene	2.86E+04 lb/day
Hydrogen flouride	1.02E+03 lb/hr	Vinylidene chloride	5.82E+04 lb/day
	1.46E+04 lb/day	Acrylonitrile	6.91E+05 lb/year
Hydrogen sulfide	8.56E+03 lb/hr	Ammonium chromate	3.82E+02 lb/year
Maleic anydride	4.08E+02 lb/hr	Ammonium dichromate	3.82E+02 lb/year
	5.82E+03 lb/day	Arsenic	1.06E+03 lb/year
Methyl chloroform	9.99E+05 lb/hr	Benzene	5.52E+05 lb/year
	5.82E+06 lb/day	Benzidine and salts	6.90E+01 lb/year
Methylene chloride	6.93E+03 lb/hr	Benzo(a)pyrene	1.52E+05 lb/year
	1.10E+08 lb/year	Beryllium	1.89E+04 lb/year
Methyl ethyl ketone	3.61E+05 lb/hr	Beryllium chloride	1.89E+04 lb/year
	1.79E+06 lb/day	Beryllium flouride	1.89E+04 lb/year
Methyl isobutyl ketone	1.22E+05 lb/hr	Beryllium nitrate	1.89E+04 lb/year
	1.24E+06 lb/day	Bis-chloromethyl ether	1.70E+03 lb/year
Methyl mercaptan	2.04E+02 lb/hr	1,3-butadiene	7.82E+05 lb/year
Nitric acid	4.08E+03 lb/hr		
Nitrobenzene	2.04E+03 lb/hr		
	2.91E+04 lb/day		

p-dichlorobenzene	2.69E+05 lb/hr	Cadmium	2.53E+04 lb/year
Pentachlorophenol	1.02E+02 lb/hr	Cadmium acetate	2.53E+04 lb/year
	1.46E+03 lb/day	Cadmium bromide	2.53E+04 lb/year
Phenol	3.87E+03 lb/hr	Calcium chromate	3.82E+02 lb/year
Phosphine	5.30E+02 lb/hr	Carbon tetrachloride	3.08E+07 lb/year
Styrene	4.32E+04 lb/hr	Chloroform	1.98E+07 lb/year
Sulfuric acid	4.08E+02 lb/hr	Chromic acid	3.82E+02 lb/year
	5.82E+03 lb/day	Chromium VI	3.82E+02 lb/year
Toluene	2.28E+05 lb/hr	Epichlorohydrin	3.82E+08 lb/year
	2.28E+06 lb/day	Ethylene dibromide	1.84E+06 lb/year
1,1,2-trichloro-1,2,2-		Ethylene dichloride	1.75E+07 lb/year
trifluoroethane	3.87E+06 lb/hr	Ethylene oxide	1.24E+05 lb/year
Xylene	2.65E+05 lb/hr	Hexachlorodibenzo-p-	
	1.31E+06 lb/day	dioxin	3.49E+02 lb/year
		n-Nitrosodimethylamine	2.30E+05 lb/year
		Nickel subsulfide	9.66E+03 lb/year
		Perchloroethylene	8.74E+08 lb/year
		Polychlorinated	
		biphenyls	3.82E+05 lb/year
		Potassium chromate	3.82E+02 lb/year
		Potassium dichromate	3.82E+02 lb/year
		Sodium chromate	3.82E+02 lb/year
		Sodium dichromate	3.82E+02 lb/year
		Strontium chromate	3.82E+02 lb/year
		1,1,1,2-tetrachloro-ethane	2.90E+07 lb/year
		Tetrachlorodibenzo-p-	
		dioxin	1.38E+01 lb/year
		Vinyl chloride	1.75E+06 lb/year
		Zinc chromate	3.82E+02 lb/year

- b. LIMITATION(S) - To ensure compliance with the above limits, the following restrictions shall apply:
- i. By weight, the total wood fuel mixture to the boiler shall consist of a maximum of 50 percent creosote treated railroad ties and/or a maximum of 10 percent brooder house poultry waste. Clean wood, plywood trimmings, particle board, and/or waste sludge (wood cellulose) can be burned at any wood fuel mixture.
 - ii. No pentachlorophenol treated railroad ties shall be combusted in this boiler.
 - iii. In addition the fuels specified herein, the permittee may utilize a maximum of 3,000 gallons per year of used oil (generated at this facility only) as a supplemental fuel in the wood waste boiler. The used oil shall be considered equivalent to No. 4 fuel oil, as approved by the Division of Air Quality.
 - iv. Chemical analysis of the used oils shall be conducted annually.
- c. REPORTING REQUIREMENT(S) - For compliance purposes, within thirty (30) days after each calendar year quarter the following shall be reported to the Regional Supervisor, Division of Air Quality:
- i. By month, the total weight of clean wood, railroad ties, plywood trimmings, particle board, waste sludge (wood cellulose) and brooder house poultry waste purchased for the boiler. Calculate each wood fuel as a percent by weight of total wood purchased.
 - ii. A certification from the railroad tie fuel vendor that all railroad ties supplied were creosote treated. In addition, the Permittee shall certify

that all railroad ties combusted at this facility were furnished by this vendor.

iii. A certification from the poultry waste supplier that all poultry waste supplied was from brooder houses only. In addition, the Permittee shall certify that all brooder house poultry waste combusted at this facility was furnished by this supplier.

d. REPORTING REQUIREMENT(S) - For compliance purposes, within thirty (30) days after each calendar year end, the following shall be reported to the Regional Supervisor, Division of Air Quality:

- i. The chemical analysis of the used oil,
- ii. The total amount of used oil burned during the previous calendar year.

2. 15A NCAC 2D .1806: Control and Prohibition of Odorous Emissions (State only requirement)

a. The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

VIII. Permit Shield (including non-applicable requirements)

In accordance with 2Q .0512 the permit will contain a provision stating that compliance with the terms, conditions, and limitations of the Title V permit shall be deemed in compliance with applicable requirements specifically identified in the permit, as of the date of permit issuance. If the permit does not expressly state that a permit shield exists then it shall be presumed not to provide such a shield.

IX. General Conditions

The "General Conditions" section of the Title V Operating Permits lists additional applicable rule requirements that the permittee must adhere to, as with any other permit condition. These requirements in general are common to all Title V facilities. The general conditions include provisions such as annual fee payment, permit renewal and expiration, transfer of ownership or operation, property rights, submission of documents, inspections and entry procedures, reopen for cause, and severability.

X. Insignificant Activities

The insignificant activities listed in the application have been reviewed and verified. Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. Following are the items on the insignificant activities list:

One 18000 gallon propane storage tank
Storage tanks for sulfuric acid, Betz Cor-Trol OS
7780, Betz PY 5201, Betz PY
5206, Betz Optisperse 78501, sodium
hypochlorite, fuel oil, and gasoline
Diesel fired welding unit

XI. Public Notice

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V Operating Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30 day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA.

XII. Recommendations

The initial Title V application for Craven County Wood Energy Plant. has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. The DAQ has made a preliminary determination that the facility is complying or will achieve compliance as specified in the draft permit with all applicable requirements. Therefore, the DAQ is proposing to issue the Title V Operating Permit upon completion of the public comment period and the EPA review.