AIR CONSTRUCTION PERMIT APPLICATION

Greenfield Torrefied Wood Pellet Manufacturing Facility

Northeast Mississippi Renewables, LLC / Fulton, MS

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1. EXECUTIVE SUMMARY

Northeast Mississippi Renewables, LLC (NMR) is proposing to construct a wood pellet manufacturing facility in Fulton, Itawamba County, Mississippi (Fulton Facility). NMR is submitting this Permit to Construct (PTC) air permit application to Mississippi Department of Environmental Quality's Environmental Permits Division (MDEQ EPD) to authorize the construction of the proposed greenfield facility.

The Fulton Facility will be located in Itawamba County, Mississippi, which is currently designated as being in attainment or an unclassified area with respect to the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. NMR is proposing to control potential emissions, such that the Fulton Facility will be categorized as a synthetic minor source with respect to Prevention of Significant Deterioration (PSD) permitting program by maintaining potential PSD pollutant emissions less than 250 tons per year (tpy).

The proposed facility will be a major source with respect to the Title V permitting program, as potential criteria emissions of at least one pollutant exceed the major source threshold of 100 tpy for criteria pollutants. The facility will be a minor source with respect to emissions of hazardous air pollutants (HAP), as potential emissions of individual HAP and total HAP are less than the major source thresholds of 10 tpy and 25 tpy, respectively. The initial Title V operating permit application will be submitted to the EPD within twelve months of the commencement of operations for the Fulton Facility.

NMR is requesting expedited processing of the construction permit application, and paying to utilize a 3rd party contractor for assisting MDEQ EPD in processing the application and draft permit development.[1]

The following information is included as part of this permit to construct application submittal package:

- Section 2 provides a description of the proposed facility operations;
- Section 3 discusses the potential emissions calculation methodologies;
- Section 4 details the regulatory applicability analysis;
- Appendix A contains the construction permit application forms;
- Appendix B includes the facility area map, site plan, and process flow diagram;
- Appendix C presents the detailed emissions calculations; and
- Appendix D contains other supporting documentation.

[1] Pre-application call completed June 5, 2025, between MDEQ and NMR representatives to review the project and air permitting requirements.

2. DESCRIPTION OF FACILITY

NMR is proposing to construct and operate a wood pellet manufacturing facility in Fulton, Itawamba County, Mississippi. The operations are categorized under Standard Industrial Classification (SIC) code 2499, Wood Products – Not Elsewhere Classified. The Fulton Facility will process whole logs, green wood residuals, and dry shavings into torrefied wood pellets to produce a source of alternative renewable fuel.

The Fulton Facility operations will include the following equipment:

- One (1) truck tipper for green residuals;
- One (1) roundwood pile;
- One (1) chipper;
- One (1) chip screen;
- One (1) green chips storage pile;
- One (1) dryer (heated by torrefication system burners);
- One (1) regenerative thermal oxidizer (RTO);
- One (1) wet electrostatic precipitator (WESP);
- Two (2) torrefication systems including natural gas and syngas burners;
- One (1) torrefied material storage silo;
- One (1) dry hammermill;
- Six (6) pellet mills;
- One (1) pellet cooler;
- One (1) natural gas-fired boiler;
- Two (2) pellet storage silos;
- One (1) barge pellet loadout area; and
- Six (6) dust collectors

The Fulton Facility will have an annual pellet production capacity of 150,000 metric tons per year (approximately 165,437 U.S. short tons per year) and will have the potential for continuous operation. All future references to tons in this permit application are in terms of U.S. short tons.

2.1 Raw Material Receiving and Processing

To optimize flexibility at the Fulton Facility, NMR plans to have the ability to receive raw material in the form of whole logs or green residuals.

NMR will have the ability to bring softwood whole logs into the Fulton Facility via trucks at a maximum annual capacity of 551,155 tpy. Logs are unloaded at the unbinding rack and are stored in the whole log pile. The logs will be moved from the pile through a chipper to be processed into green chips.

Additionally, NMR will have the ability to bring green residuals to the facility by truck at a maximum annual capacity of 165,347 tpy, where one (1) truck tipper will transfer the green residuals into the processing area along with green chips processed from the whole logs. The residuals will be screened and will be transported through on-site conveyors to the chipper as needed.

2.2 Biomass Drying

NMR is proposing to install one (1) biomass dryer system to dry the green chips. The rotary dryer will process the wood chips to approximately 10% moisture content in preparation for the torrefication operation. The green chips and sawdust are mixed with indirect heat from the torrefication system burners in the rotary dryer. The dryer will be designed to ensure proper mixing of green chips with heat and sufficient retention time.

The dryer processes the residual mix containing approximately 40-50% moisture to dried wood with a moisture content of approximately 10%. The exhaust gases will be controlled by a wet electrostatic precipitator (WESP) for particulate matter (PM) and metal HAPs emissions control, as well as by a regenerative thermal oxidizer (RTO) for volatile organic compounds (VOC) and organic HAPs emissions control. The RTO burners will combust natural gas only and have a total maximum heat input capacity of 8.7 million British Thermal Units per hour (MMBtu/hr).

2.3 Torrefication System

Torrefaction is a form of pyrolysis in which the biomass is thermochemically treated under atmospheric pressure and in the absence of oxygen while being heated up to approximately 600° F. During the process, the biomass releases its inherent moisture and superfluous volatiles. The hemicellulose, cellulose, and lignin in the biomass partly decompose releasing more volatiles. These volatiles are used in the heating of the torrefaction process, the recycled synthetic gas (syngas). Torrefaction reduces the moisture content of the biomass from 10% to approximately zero. The system will be equipped with two (2) torrefiers, and each unit will utilize an 85 MMBtu/hr burner for the process. Both burners will be dual fired utilizing natural gas and the syngas generated in the torrefication processes. Exhaust from the burners combustion (natural gas or syngas) will be routed through the dryer and controlled by the WESP and RTO.

The dryer and torrefication system will also include a bypass stack for use during upset conditions, with the circumvention of the control devices (WESP and RTO). The estimated uncontrolled emissions is based on 500 hr/yr of upset conditions for the system.

The final product is the dry, solid chips. A storage silo will be used to store the dry, torrefied chips in the post-torrefaction part of the process. A dust collector will control the displaced air (PM emissions) from the loading of the torrefied material storage silo.

Due to the removal of moisture content (and organic content) from the torrefied material, no VOC or organic HAP emissions will occur in the post-torrefication operations (pelletizing of the material). Therefore, only PM emissions will result from the dry hammermill, pellet mills, pellet cooler, pellet storage, and barge loadout operations.

2.4 Dry Hammermill

From the torrefied material storage silo, the material will be conveyed into a dry hammermill. The dry hammermill is designed to further reduce the material size for generating pellets. The dry hammermill system will be limited to a throughput of 260,718 tpy. Exhaust from the dry hammermill will be routed to a dust collector for PM emissions control.

2.5 Pelletizing Operation

Following the dry hammermilling process, the torrefied material will be conveyed to the pelletizing area, which will include six (6) pellet mills. The pellet mills will be followed by one (1) pellet cooler. The pellet mills compress the torrefied material into pellets by rolling and squeezing the material through holes in a dye. The process of squeezing the torrefied material generates heat which causes the wood's natural lignin to flow. The wood's natural lignin produces a natural binder that holds the pellet together. Additional heat will be added to the pellet mills via conditioning steam from a natural gas-fired boiler with a total maximum heat input capacity of 8.6 MMBtu/hr.

Immediately after the pellets are produced, they will be directed to the pellet cooler in the pelletizing area. Ambient air will be used as a cooling medium in a direct contact process of heat exchange. Exhaust air from this pellet press system and cooling process will be routed to a dust collector for control of PM emissions.

2.6 Pellet Storage and Barge Loadout

Pellets produced will be transferred into two (2) pellet loadout storage silos. The pellets will feed out of the storage silos into open top barges for transfer off-site, with a potential annual throughput of 165,347 tpy. Exhaust air from the storage silos will be controlled by separate dust collectors for reducing PM emissions. Additionally, a dust collector will control PM emissions from the barge loadout operation.

2.7 Combustion Sources

As previously referenced, the torrefication systems will be equipped with two (2) 85 MMBtu/hr burners firing natural gas or syngas fired. The burners will exhaust into the rotary dryer and be controlled by the WESP and RTO.

The RTO will be equipped with a total of 8.7 MMBtu/hr natural gas-fired burners.

The Fulton Facility will also include an 8.6 MMBtu/hr natural gas-fired boiler to supply conditioning steam to the pellet mills. The boiler will include a low-NO_X burner with no add-on pollution control devices.

2.8 Emergency Fire Pump

The Fulton Facility will include one diesel emergency fire pump for fire prevention needs. The engine will have a capacity of 220 hp and will operate a maximum of 500 hours (100 non-emergency hours) annually.

3. EMISSIONS QUANTIFICATION

The Fulton Facility has emissions of carbon monoxide (CO), nitrogen oxides (NO_X), filterable PM, total PM_{10}, total $PM_{2.5}$, sulfur dioxide (SO_2), VOC, greenhouse gases (GHGs) in the form of carbon dioxide equivalent (CO_2e), and HAP. Detailed emissions calculations for the facility are included in Appendix C.

3.1 Whole Log and Green Chips Processing

The wood handling, storage, and wood chipping operations are sources of fugitive filterable $PM/PM_{10}/PM_{2.5}$ emissions. Emission rates of these processing operations are estimated based on the drop point equation in AP-42, Section 13.2.4, *Aggregate Handling and Storage Piles* (September 2006). Fugitive dust from the drop and transfer operations that are not confined in an enclosure and are not equipped with a dust control system (i.e., baghouse) are estimated based on maximum throughput rates, and the methodology outlined in AP 42 Section 13.2.4, Equation 1:

$$PM\ Emissions\ \left(\frac{lb}{ton}\right) = k \times 0.0032 \times \left(\frac{U}{5}\right)^{1.3} \div \left(\frac{M}{2}\right)^{1.4}$$

Where: k = particle size multiplier, obtained from AP-42 Section 13.2.4.4
M = material moisture content, based on facility design basis
U = mean wind speed, mph, based on site measurements

As the site is designed to receive both whole logs and green residuals for pelletizing, emissions are quantified for both scenarios assuming an annual throughput of 165,437 tons of finished pellets per year at 50% moisture content. Annual throughputs of whole logs and green residuals are 551,155 tons of whole logs and 165,347 green residual tons, respectively, based on equipment sizing. As these sources are not combustion sources, condensable PM is negligible. Therefore, filterable $PM/PM_{10}/PM_{2.5}$ is equal to total $PM/PM_{10}/PM_{2.5}$.

3.2 Dryer and Torrefaction Systems

The torrefication system consists of the rotary dryer and torrefaction operations with a WESP and RTO for emissions controls. Emissions from the dryer occur as a result of the biomass drying. The dryer vendor has provided emission guarantees for CO, NO_X, VOC, Filterable PM, and total HAP after control by the WESP and RTO. Potential emissions for other pollutants from the dryer are calculated using uncontrolled emission factors from the Georgia EPD guidance for wood pellet manufacturing facilities for a rotary dryer (direct wood-fired processing green softwood at a Wood Pellet Manufacturing facility). For other individual HAP of acrolein, phenol, and propionaldehyde, uncontrolled emissions factors for biomass drying from AP-42 Section 10.6.2, *Particleboard Manufacturing*, Table 10.6.2-3, for a Rotary dryer, green, direct wood-fired, softwood (06/02) are used. A removal efficiency of 70% is applied for HCl as a WESP unit is used for PM control. For the remaining organic HAP emission factors, a 95% control efficiency is applied to account for the RTO units.

The torrefiers will mainly use recirculated syngas for heating purposes. Each torrefier will be equipped with a burner firing natural gas or syngas. Because of the recirculation of the synthetic gas within the torrefiers, VOC and HAP emissions will be negligible because each gives the synthetic gas its heating value. The HAP emissions estimated from the torrefication burners is the maximum level for specific HAP combusting either natural gas (emission factors source subsequently referenced) or syngas (wood residue combustion emission factors conservatively used from AP-42 Section 1.6, *Wood Residue Combustion in Boilers*, Table 1.6-1,2,3).

Potential emissions from natural gas combustion in the RTO are calculated using AP-42 Section 1.4, *Natural Gas Combustion*, Tables 1.4-1 and 1.4-3 emission factors. Emissions of GHG from natural gas combustion in the form of CO_2e were calculated by multiplying each GHG pollutant by its respective global warming potential pursuant to 40 CFR Part 98.

3.3 Torrefied Material Handling and Storage Silo

The torrefied material handling operations are non-fugitive sources of filterable PM/PM_{10}/$PM_{2.5}$ emissions. The torrefaction process removes all VOC and organic HAP from the torrefied material. Emission rates of these storage and handling operations are estimated based on the drop point equation in AP-42, Section 13.2.4, *Aggregate Handling and Storage Piles* (September 2006). Dust from the drop and transfer operations that are not confined in an enclosure and are not equipped with a dust control system (i.e., baghouse) are estimated based on maximum throughput rates, and the methodology outlined in AP 42 Section 13.2.4, Equation 1:

$$PM\ Emissions\ \left(\frac{lb}{ton}\right) = k \times 0.0032 \times \left(\frac{U}{5}\right)^{1.3} \div \left(\frac{M}{2}\right)^{1.4}$$

Where:

k = particle size multiplier, obtained from AP-42 Section 13.2.4.4
M = material moisture content, based on facility design basis
U = mean wind speed, mph, based on site measurements

As these torrefied material handling operations are not combustion sources, condensable PM is negligible. Therefore, filterable PM/PM_{10}/$PM_{2.5}$ equals total PM/PM_{10}/$PM_{2.5}$.

The torrefied material storage silo is a non-fugitive source of filterable PM/PM_{10}/$PM_{2.5}$ emissions. Filterable PM/PM_{10}/$PM_{2.5}$ emissions from the silo is controlled by a dust collector. Filterable PM/PM_{10}/$PM_{2.5}$ emissions are calculated using an exit grain loading rate methodology based on vendor estimates for the control device. This emissions calculation method uses the exhaust air flow rate and estimated mass concentration as opposed to control device efficiency. As these sources are not combustion sources, condensable PM is negligible. Therefore, filterable PM/PM_{10}/$PM_{2.5}$ equals total PM/PM_{10}/$PM_{2.5}$.

3.4 Dry Hammermills and Pellet Mills/Pellet Coolers

The grinding and pelletizing operations are non-fugitive sources of filterable PM/PM_{10}/$PM_{2.5}$ emissions. Filterable PM/PM_{10}/$PM_{2.5}$ emissions from the dry hammermill and pelletizing operations (pellet mills and pellet cooler) are controlled by dust collectors. Filterable PM/PM_{10}/$PM_{2.5}$ emissions from the dry hammermill and pelletizing operations are calculated using an exit grain loading rate methodology based on vendor estimates for the control devices. This emissions calculation method uses the exhaust air flow rate and estimated mass concentration as opposed to control device efficiency. As these sources are not combustion sources, condensable PM is negligible. Therefore, filterable PM/PM_{10}/$PM_{2.5}$ equals total PM/PM_{10}/$PM_{2.5}$.

3.5 Pellet Storage and Loadout

Pellet storage and loadout operations are non-fugitive sources of filterable PM/PM_{10}/$PM_{2.5}$. Filterable PM/PM_{10}/$PM_{2.5}$ emissions from pellet storage and loadout operations are controlled by dust collectors. Filterable PM/PM_{10}/$PM_{2.5}$ emissions are calculated using an exit grain loading rate methodology based on vendor estimates for the control devices. This emissions calculation method uses the exhaust air flow rate and estimated mass concentration as opposed to control device efficiency. As these sources are not

combustion sources, condensable PM is negligible. Therefore, filterable PM/PM_{10}/$PM_{2.5}$ equals total PM/PM_{10}/$PM_{2.5}$.

3.6 Fire Water Pump Engine

Diesel combustion in the emergency fire water pump engine result in emissions of CO, NO_X, total PM/PM_{10}/$PM_{2.5}$, SO_2, VOC, GHGs, and HAP. The engine criteria pollutant emissions calculations are based on NSPS Subpart IIII limitations for several criteria pollutants (CO, PM, and NO_X) and AP-42 Section 3.3 (VOC, HAP, CO_2).[2] Note that total PM_{10} and total $PM_{2.5}$ are assumed to be equal to total PM for the engine. SO_2 emissions are based on a maximum fuel sulfur content of 15 ppm by weight (as required by NSPS Subpart IIII beginning October 1, 2010). CH_4 and N_2O emission factors were calculated using emission factors for diesel fuel from 40 CFR 98, Subpart C, Table C-2. Emissions of GHG in the form of CO_2e were calculated by multiplying each GHG pollutant by its respective global warming potential from 40 CFR Part 98, Subpart A, Table A-1. A maximum operating schedule of 500 hr/yr is assumed for estimating potential emissions from the emergency fire pump engine.[3]

3.7 Auxiliary Natural Gas Equipment

Natural gas-fired RTO burners will be used for control of emissions from the dryer and torrefiers. Emissions are quantified using the natural gas combustion emission factors from AP-42 Section 1.4.

The RTO is assumed to control VOC with 95% efficiency. For the organic HAP emission factors, a 95% control efficiency is applied to account for routing to the RTO.

Emissions of GHG from natural gas combustion in the form of CO_2e were calculated by multiplying each GHG pollutant by its respective global warming potential pursuant to 40 CFR Part 98.

3.8 Paved Roads

The logs and green residuals are transferred to the facility via trucks. The truck roads are paved and the truck traffic results in fugitive sources of filterable PM/PM_{10}/$PM_{2.5}$ emissions. Emission rates of the truck traffic are estimated based on the equations in AP-42, Section 13.2.1.3, *Paved Roads* (January 2011). Dust from the truck traffic is estimated based on potential daily loads (based on maximum annual throughout of whole logs and green residuals), continuous delivery to the facility, distance travelled (loaded and unloaded) on paved roads at the facility by the trucks, and the methodology outlined in AP 42 Section 13.2.1.3, Equations 1 and 2:

$$PM\ Emissions\ (hourly)\ \left(\frac{lb}{VMT}\right) = k \times (sL)^{0.91} x (W)^{1.02}$$

Where:

k = particle size multiplier, lb/VMT
sL = silt loading (g/m^2)
W = average weight of trucks on paved roads (tons)

[2] U.S. EPA AP-42 Section 3.3, *Gasoline and Diesel Industrial Engines*. October 1996. https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf

[3] Potential operation includes non-emergency service (readiness testing and maintenance as recommended by the manufacturer) and emergency usage.

$$PM\ Emissions\ (annual)\left(\frac{lb}{VMT}\right) = [k \times (sL)^{0.91} x (W)^{1.02}](1 - \frac{P}{4N})$$

Where:

k = particle size multiplier, lb/VMT
sL = silt loading (g/m^2)
W = average weight of trucks on paved roads (tons)
P = number of days with at least 0.01 in. of precipitation per year, Figure 13.2.1-9
N = number of days in the average period

Since truck traffic fugitive PM emissions are not combustion sources, condensable PM is negligible. Therefore, filterable PM/PM_{10} is assumed equivalent to total PM/PM_{10}. Furthermore, due to no particle size multiplier for $PM_{2.5}$, the potential $PM_{2.5}$ emissions are assumed equivalent to PM_{10}.

3.9 Facility-Wide Potential Emissions

Table 3-1 includes the facility-wide controlled criteria pollutant, GHG, and HAP emissions. Detailed emissions calculations are included in Appendix C of the permit application. The potential emissions in Table 3-1 include emissions with fugitives, which are compared to the Title V major source thresholds, and emissions without fugitives, which are compared to the PSD major source thresholds. Facility-wide emissions can exclude fugitives from the PSD major source determination as wood pellet production operation is not on the list of 28 categories with a lower major source threshold for criteria pollutants, which requires subject source categories to include fugitive emissions for permitting applicability determinations.

Table 3-1. Facility-Wide Potential Emissions

Pollutant	Potential Emissions Including Fugitives (tpy)	PSD Major Source Threshold (tpy)	Above Threshold?	Potential Emissions Without Fugitives (tpy)	Title V Major Source Threshold (tpy)	Above Threshold?
Filterable PM	100.50	250	No	76.92	100	No
Total PM_{10}	101.34	250	No	91.51	100	No
Total $PM_{2.5}$	95.60	250	No	91.51	100	No
NO_X	102.55	250	No	102.55	100	Yes
CO	116.03	250	No	116.03	100	Yes
SO_2	0.13	250	No	0.13	100	No
VOC	72.45	250	No	72.45	100	No
CO_2e	96,954	75,000	N/A	96,954	N/A	N/A
Total HAP	10.51	N/A	N/A	10.51	25	No
Individual HAP*	4.81	N/A	N/A	4.81	10	No

*The maximum individual HAP is Hydrogen Chloride.

4. REGULATORY APPLICABILITY REVIEW

Potentially applicable rules are discussed for the Fulton Facility in the following section. These include federal and state air regulations.

4.1 New Source Review

New Source Review (NSR) requires that federal construction permitting of new emission sources or modifications to existing emission sources be completed when significant net emission increases result. Two distinct NSR permitting programs apply depending on whether the facility is located in an attainment or nonattainment area for a particular pollutant. Nonattainment New Source Review (NNSR) permitting applies to new construction or modifications that result in emission increases of a particular pollutant for which the area in which the facility is located is classified as "nonattainment" for that pollutant. The PSD permitting program applies to project increases of those pollutants for which the area the facility is located in is classified as "attainment" or "unclassifiable".

The Fulton Facility will be located in Itawamba County, which has been classified as in attainment with the NAAQS or unclassified for all regulated pollutants. Therefore, the Fulton Facility is not subject to NNSR permitting requirements for any criteria pollutants. The facility is potentially subject to PSD permitting requirements.

Under PSD permitting rules, the major source threshold is 250 tpy for criteria pollutants, unless the facility is listed specifically in 40 CFR 52.21 as having a lower 100 tpy threshold. Wood pellet production is not on the list of 28 categories detailed in 40 CFR 52.21 with a lower threshold of 100 tpy for criteria pollutants. As shown in Table 3-1, the Fulton Facility will be a minor source for the purposes of PSD permitting requirements as facility-wide potential emissions of all criteria pollutants will be below the major source threshold of 250 tpy.

4.1.1 Operational Limitations

NMR will operate control devices on multiple emission units at the Fulton Facility, limiting potential emissions of PSD pollutants. NMR requests the parametric monitoring as limitations associated with the respective control devices (WESP, RTO, and dust collectors) for demonstrating PSD synthetic minor source classification. The control device parametric range(s) and threshold(s) can be established in one-time performance testing for the respective PSD pollutant emissions.

4.2 Title V Operating Permit Program

40 CFR Part 70 establishes the federal Title V operating permit program. Mississippi has incorporated the provisions of the federal program in the Mississippi Administrative Cods for air quality and permitting (11 Miss. Admin. Code Pt. 2, Chapter 6). The major source thresholds with respect to the Mississippi Title V operating permit program for sources in attainment areas are 10 tpy of a single HAP, 25 tpy of any combination of HAP, or 100 tpy of a criteria pollutant. As referenced in Table 3-1, the facility wide potential emissions will exceed the Title V major source thresholds for at least one criteria pollutant. Therefore, NMR will submit an application for the initial Title V operating permit within twelve (12) months after operation of the facility commences as required by the program.

4.3 New Source Performance Standards

New Source Performance Standards (NSPS) have been promulgated to govern the emissions of specific sources of air pollutants that are modified, constructed, or reconstructed after the applicability dates of the regulations. The NSPS regulations are documented in 40 CFR Part 60. The following is a list of potentially applicable NSPS.

4.3.1 40 CFR 60 Subpart A – General Provisions

All affected sources subject to source-specific NSPS are subject to the general provisions of NSPS Subpart A unless specifically excluded by the source-specific NSPS. Subpart A requires initial notification, performance testing, recordkeeping and monitoring, provides reference methods, and mandates general control device requirements for all other subparts as applicable.

4.3.2 40 CFR 60 Subpart D – Fossil Fuel-Fired Steam Generators

NSPS Subpart D, *Standards of Performance for Fossil Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971*, applies to steam generating units with a heat input capacity of 250 MMBtu/hr or greater from fossil fuel combustion for which construction is commenced after August 17, 1971. The torrefier burners and natural gas fired boiler at the Fulton Facility will not have a maximum heat input capacity greater than 250 MMBtu/hr, and only the boiler will produce steam. Therefore, the facility will not be subject to NSPS Subpart D.

4.3.3 40 CFR 60 Subpart Da – Electric Utility Steam Generators

NSPS Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978*, applies to electric utility steam generating units (EGUs) with a fossil fuel heat input capacity of 250 MMBtu/hr or greater (alone or in combination with any other fuel) for which construction, modification, or reconstruction began after September 18, 1978. The torrefier burners and natural gas fired boiler at the Fulton Facility will not be subject to Subpart Da as the units do not meet the definition of electric utility steam generating units.

4.3.4 40 CFR 60 Subpart Db – Industrial, Commercial, and Institutional Steam Generating Units

NSPS Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, applies to industrial, commercial, and institutional steam generating units with a heat input greater than 100 MMBtu/hr that began construction, modification, or reconstruction after June 19, 1984*. The individual heat input capacities for the torrefier burner and RTO burners is less than 100 MMBtu/hr, respectively. Furthermore, these units will not generate steam for process operations and does not meet the definition of a steam generating units subject to this regulation. Therefore, the torrefier burners and RTO burners will not be subject to the requirements of Subpart Db.

The natural gas-fired boiler has a maximum heat input capacity of 8.6 MMBtu/hr. Therefore, the boiler is not subject to Subpart Db.

4.3.5 40 CFR 60 Subpart Dc – Small Industrial, Commercial, and Institutional Steam Generating Units

NSPS Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, applies to steam generating units with a maximum heat input capacity of 100 MMBtu/hr or less, but

greater than or equal to 10 MMBtu/hr. The applicability date for NSPS Subpart Dc is June 9, 1989. The torrefier burners heat input capacity is 85 MMBtu/hr (for each burner). However, the burners will be used to generate heat for drying biomass and torrefication process and will not be utilized to generate steam for process operations. Therefore, the units do not meet the definition of a steam generating unit regulated under this rule. Therefore, the torrefier burners are not subject to the requirements of Subpart Dc.

The maximum heat input capacity for the RTO burners is 8.7 MMBtu/hr. Therefore, these burners are not subject to Subpart Dc.

The natural gas-fired boiler produces steam for use in the pelletizing process, but the unit has a maximum heat input capacity of 8.6 MMBtu/hr. Therefore, the boiler is not subject to Subpart Dc.

4.3.6 40 CFR 60 Subpart E – Incinerators

NSPS Subpart E, *Standards of Performance for Incinerators*, applies to incinerators with a charging rate of 50 tons/day for which construction or modification commenced after August 17, 1971. An incinerator is defined as any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter. The combustion sources at the Fulton Facility will not combust solid waste; therefore, this subpart is not applicable.

4.3.7 40 CFR 60 Subpart IIII – Compression Ignition Internal Combustion Engines

NSPS Subpart IIII applies to stationary compression ignition (CI) internal combustion engines (ICE) manufactured after April 1, 2006. NMR will install a diesel-fired emergency fire pump. This regulation is potentially applicable to the diesel-fired pump engine, which is anticipated to be rated at 220 hp. The proposed unit meets the definition of emergency stationary ICE in 40 CFR 60.4219. Per the NSPS, a fire pump engine is defined as "emergency stationary internal combustion engine certified to National Fire Protection Association (NFPA) requirements that is used to provide power to pump water for fire suppression or protection." The unit is a fire pump engine that will be certified to National Fire Protection Association (NFPA) requirements.[4]

4.3.7.1 Emission Limits

Per 40 CFR 60.4202(a)(2), the emergency use fire pump engine must meet the requirements of 40 CFR 89.112 and 113. The engine has been certified by its manufacturer to be in compliance with these emission standards.

Per 40 CFR 60.4205(c), the emergency fire pump engine must meet the emission standards in Table 4 of the rule, which include:

- NHMC + NO_X – 3.0 g/hp-hr
- CO – 2.6 g/hp-hr
- PM – 0.15 g/hp-hr

Additionally pursuant to 40 CFR 60.4207, the fire pump engine will have to meet the fuel requirements of 40 CFR 80.510(a) and (b), which state that fuel oil combusted in CI ICE must meet the following requirements:

- Maximum sulfur content of 15 ppm; and
- Minimum Centane index of 40 or maximum aromatic content of 35% by volume.

[4] 40 CFR 60.4219

NMR will use fuel that meets the required specifications.

4.3.7.2 Monitoring, Recordkeeping, and Reporting

NMR must operate and maintain the stationary CI ICE according to the manufacturer's written instructions or procedures developed by NMR that are approved by the engine manufacturer. In addition, NMR may only change those settings that are permitted by the manufacturer. The engine is required to be equipped with a non-resettable hour meter prior to the startup of the engine.

Per 40 CFR 60.4211(e), emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations given in the regulation.

No initial notifications are required for emergency engines, per 40 CFR 60.4214(b). NMR will keep records of the operation of the engine in emergency and non-emergency services that are recorded through the non-resettable hour meter. NMR must record the time of operation of the engine and the reason the engine was in operation during that time. NMR should keep records of the Certificate of Conformity, a document typically supplied by the manufacturer stating the engine is NFPA certified and certified to meet EPA standards.

4.3.8 Non-Applicability of All Other NSPS

NSPS standards are developed for particular industrial source categories and the applicability of a particular NSPS to a facility can be readily ascertained based on the industrial source category covered. All other NSPS are categorically not applicable to the Fulton Facility.

4.4 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) are emission standards for HAP and are applicable to major and area sources of HAP. A HAP major source is defined as having potential emissions in excess of 25 tpy for total HAP and/or potential emissions in excess of 10 tpy for any individual HAP. An area source is a stationary source that is not a major source. Part 63 NESHAP allowable emission limits are established on the basis of a Maximum Achievable Control Technology (MACT) determination for a particular source category. NESHAP apply to sources in specifically regulated industrial source categories (CAA Section 112(d)) or on a case-by-case basis (Section 112(g)) for facilities not regulated as a specific industrial source type. Potential emissions at the Fulton Facility will be less than 25 tpy for total HAP and 10 tpy for individual HAP. Therefore, the facility is an area source of HAP emissions. Due to control devices (WESP and RTO) controlling HAP emissions from the dryer and torrefication processes, NMR requests synthetic minor emissions limitations for individual HAPs at 9 tons/12-month rolling period and total HAPs at 24 tons/22-month rolling period.

Regulatory requirements for facilities subject to Part 61 and Part 63 NESHAP are incorporated by reference in Mississippi's Administrative Code, 11 Miss. Admin. Code Pt. 2, Chapter 8.

4.4.1 40 CFR 63 Subpart A – General Provisions

NESHAP Subpart A, *General Provisions*, contains national emission standards for HAP defined in Section 112(b) of the Clean Air Act. All affected sources which are subject to another NESHAP are subject to the general provisions of NESHAP Subpart A, unless specifically excluded by the source-specific NESHAP.

4.4.2 40 CFR 63 Subpart DDDD – Plywood and Composite Wood Products

NESHAP Subpart DDDD, *NESHAP for Plywood and Composite Wood Products*, applies to major sources of HAP that manufacture plywood or composite wood products (PCWP) by bonding wood materials (fibers, particles, strands, veneers, etc.) or agricultural fiber, generally with resin under heat and pressure, to form a structural panel or engineered wood product. The Fulton Facility is an area source of HAP emissions; therefore, NESHAP Subpart DDDD does not apply.

4.4.3 40 CFR 63 Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines

NESHAP Subpart ZZZZ regulates HAP emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. Per 40 CFR 63.6590(a)(2)(iii), a stationary RICE at a major source of HAP is considered new if construction commences on or after June 12, 2006. The proposed diesel emergency fire pump engine qualifies as a new stationary RICE. However, compliance per NESHAP for the engine is attained through compliance with the requirements of NSPS IIII.[5] NMR will ensure compliance to applicable requirements or limits for the diesel fire pump engine.

4.4.4 40 CFR 63 Subpart DDDDD – Industrial, Commercial, and Institutional Boilers and Process Heaters (Major Sources)

NESHAP Subpart DDDDD, *NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters*, regulates HAP emissions from solid, liquid, and gaseous-fired boilers and process heaters at facilities that are major sources of HAP. The Fulton Facility will be an area source of HAP emissions; therefore, NESHAP DDDDD does not apply for the natural gas-fired boiler.

4.4.5 40 CFR 63 Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers (Area Sources)

NESHAP Subpart JJJJJJ, *NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources*, regulates HAP emissions from boilers at facilities that are area sources of HAP. The Fulton Facility torrefier burners are not defined as boilers per 40 CFR 63.11237, because no portion of the heat from these systems are used to generate steam at the facility.

> *Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady state, process wherein fuel and/or oxidizer feed rates are controlled. Waste heat boilers are excluded from this definition.*

Therefore, the torrefier burners are not subject to the requirements of Subpart JJJJJJ.

[5] 40 CFR 63.6590(c)(6)

Per 40 CFR 63.11195(e), a natural gas-fired boiler is not subject to Subpart JJJJJJ. Because the Fulton Facility boiler will only fire natural gas, the unit is not subject to Subpart JJJJJJ.

4.4.6 40 CFR 63 Subpart QQQQQQ – Wood Preserving (Area Sources)

NESHAP Subpart QQQQQQ, *NESHAP for Wood Preserving Area Sources*, applies to area sources of HAP that conduct wood preserving operations. A wood preserving operation is defined by Subpart QQQQQQ as a pressure treatment process with use of a wood preservative containing chromium, arsenic, dioxins, or methylene chloride, where the preservative is applied to the wood product inside a retort or similarly closed vessel. The Fulton Facility will not use any wood preservatives in the production of the wood pellets. Therefore, Subpart QQQQQQ is not applicable to the pelletizing operations.

4.4.7 Non-Applicability of All Other NESHAP

NESHAP standards are developed for particular industrial source categories, and the applicability of a particular NESHAP to a facility can be readily ascertained based on the industrial source covered. All other NESHAP are categorically not applicable to the facility.

4.5 Compliance Assurance Monitoring (CAM)

The Compliance Assurance Monitoring (CAM) rule (40 CFR Part 64) became effective November 21, 1997. A CAM Plan may be due upon renewal of the facility's Title V Operating Permit or during a significant modification. The rule applies to units that:

- Are subject to an emission limit,
- Use a control device to achieve compliance with the emission limit, and
- Have potential *pre-control* device emissions equal to or greater than the major source threshold. ("Potential *pre-control* device emissions" has the same meaning as "potential to emit", except emission reductions achieved by the control device are not taken into account.)

This is a new greenfield source and the application is not a permit renewal or significant modification. Therefore, on this basis, a CAM Plan will not be required until the Title V permit renewal application is submitted as stated in 40 CFR 64.5 or a significant modification occurs.

4.6 Risk Management Plan

Under Title III, Section 112(r), of the Clean Air Act Amendments (CAAA), the EPA was required to promulgate regulations regarding storage and handling of hazardous chemicals that could be harmful if there were an accidental release of these chemicals into the environment. The regulation was promulgated in March 1994 as the Risk Management Program (RMP) Rule under 40 CFR 68. Of those chemicals listed, none will be stored on site in total quantities and/or concentrations greater than the applicable thresholds. Therefore, the Fulton Facility will not be required to develop and register a Risk Management Plan.

4.7 Acid Rain Regulations

These regulations apply to utility units for the control of acid rain precursors and other pollutants. These regulations will not apply to the Fulton Facility.

4.8 Stratospheric Ozone Rules

These regulations, under 40 CFR 82, apply to the use, reuse, consumption, and manufacture of stratospheric ozone depleting substances which include Class I and Class II substances and refrigerants. These regulations also include requirements for training and certification of personnel involved in maintenance of certain air conditioning systems using listed refrigerants. The rules require identification of all units with a capacity of 50 pounds or more of refrigerant and servicing of machines containing regulated refrigerants performed by trained and certified individuals. The Fulton Facility will comply with the standard if applicable by using certified personnel and maintaining required records.

4.9 Mississippi Administrative Code

In addition to federal air regulations, 11 Miss. Admin. Code Pt. 2, Chapters 2 and 6 establish regulations applicable at the emission unit level (source-specific) and at the facility level. The rules also contain requirements related to the need for construction and/or operating permits.

4.9.1 11 Miss. Admin. Code Pt. 2, R.1.3.A(1)-(2) & 1.3.B – Visible Emissions

No source is allowed to emit particulate matter (PM) such that the opacity exceeds forty percent (40%). However, during startup operations the source may exceed the 40% opacity requirement for up to 15 minutes per startup in any one hour, not to exceed three (3) startups per 24-hour period. Facility fuel burning equipment combusts natural gas only and control equipment (i.e., dust collectors) are utilized for the various PM generating processes; therefore, opacity is expected to be well within the required limit.

4.9.2 11 Miss. Admin. Code Pt. 2, R.1.3.C – General Nuisances

No source shall allow the emissions of particles or any contaminants in sufficient amounts or of such duration from any process as to be injurious to humans, animals, plants, or property, or to be a public nuisance, or create a condition of air pollution. This rule will apply to all emission sources at the Fulton Facility.

4.9.3 11 Miss. Admin. Code Pt. 2, R.1.3.D(1)(a) – PM Emissions from Fuel Burning

This regulation limits emissions from fuel burning equipment based on heat input capacity. The maximum permissible emission of ash and/or PM from fossil fuel burning installations of less than 10 MMBtu/hr heat input shall not exceed 0.6 pounds per million Btu (lb/MMBtu) heat input. This regulation will apply to the torrifier burners, RTO burners, and natural gas-fired boiler.

4.9.4 11 Miss. Admin. Code Pt. 2, R.1.3.D(1)(b) – PM Emissions from Fuel Burning

All fuel burning equipment with a rated capacity greater than 10 MMBtu/hr but less than 10,000 MMBtu/hr shall not exceed an emission limitation equal to

$$E = 0.8808 \times I^{-0.1667}$$

Where: E = allowable PM emission rate (lb/hr)
I = heat input (MMBtu/hr)

This regulation will apply to the torrefier burners as each unit has maximum heat input capacity of 85 MMBtu/hr (firing natural gas or syngas).

4.9.5 11 Miss. Admin. Code Pt. 2, R.1.3.F – PM Emissions from Manufacturing Processes

This regulation, commonly known as the process weight rule (PWR), establishes PM limits for all sources if not specified elsewhere. No source shall cause, permit, or allow the emission of PM in total quantities in any one hour from any manufacturing process, which includes associated stacks, vents, outlets, or combination thereof, to exceed the amount determined by the relationship

$$E = 4.10 \times p^{0.67}$$

Where: E = allowable PM emission rate (lb/hr)
p = process input weight rate (tons/hr)

This regulation applies to the raw material, torrefied material, and pellets processing and handling systems. Since the torrefier burners and boiler are subject to a PM limit under Rule (d), this rule does not apply to the combustion units.

4.9.6 11 Miss. Admin. Code Pt. 2, R.1.3.G – PM Emissions from Open Burning

This regulation imposes restrictions on open burning activities. The regulation specifies what type of burning is permitted, when, and where. The facility shall comply with the requirements of this regulation in the event of performing open burning.

4.9.7 11 Miss. Admin. Code Pt. 2, R.1.4.A(1) – Sulfur Dioxide

All fuel burning equipment in which the fuel is burned primarily to produce heat or power by indirect heat transfer shall not exceed an SO_2 emission rate of 4.8 lb/MMBtu. Fuel burning equipment will only combust natural gas, syngas, and #2 fuel oil (diesel fuel). Therefore, emissions are not expected to result in non-compliance with this conservative emissions standard.

4.9.8 11 Miss. Admin. Code Pt. 2, R.2.13.A & R.2.13.D(5) – New Source Permit to Construct

The facility is considered a new "greenfield" stationary source. Calculations demonstrate that facility-wide potential emissions for criteria pollutants (PM, NO_X, and CO) are above the Categorical Exclusion from Permit to Construct thresholds. Therefore, the facility is required to obtain an air construction permit.

4.9.9 11 Miss. Admin. Code Pt. 2, R.2.13.G & R.6.1.A.17.B – Title V Permit to Operate

Calculations demonstrate that facility-wide allowable emissions for the criteria pollutants Total PM_{10}, Total $PM_{2.5}$, NO_X, and CO are above the Title V major source threshold of 100 tpy. Therefore, the facility will be considered a Title V major source for criteria pollutants. The facility will submit the initial Title V permit application within 12 months of the commencement of operation at the Fulton Facility.

APPENDIX A. PERMIT TO CONSTRUCT AIR APPLICATION FORMS

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

1. Name, Address, and Location of Facility

A. Owner/Company Name: Northeast Mississippi Renewables, LLC

B. Facility Name *(if different than A. above)*: Northeast Mississippi Renewables Fulton Facility

C. Facility Air Permit No. *(if known)*:

D. Agency Interest No. *(if known)*:

E. Physical Address
1. Street Address: 200 Access Road
2. City: Fulton
3. State: MS
4. County: Itawamba
5. Zip Code: 38843
6. Telephone No.:
7. Fax No.:

F. Mailing Address *(if different from physical address)*
1. Street Address or P.O. Box: P.O. Box 355
2. City: Fulton
3. State: MS
4. Zip Code: 38843

G. Latitude/Longitude Data
1. Collection Point *(check one)*:
   ☒ Plant Entrance ☐ Other:
2. Method of Collection *(check one)*:
   ☐ GPS Specify coordinate system (NAD 83, etc.)
   ☒ Map Interpolation (Google Earth, etc.) ☐ Other:
3. Latitude *(degrees/minutes/seconds)*: 34º 14’ 34.39” N
4. Longitude *(degrees/minutes/seconds)*: 88º 24’ 36.79” W
5. Elevation: 265 feet

H. SIC/NAICS Codes *(primary code listed first)*
SIC: 2499
NAICS: 321999
(NAICS Code should correspond with the SIC Code directly above.)

2. Name and Address of Facility Contact

A. Name: Donald Land Title: Partner

B. Mailing Address
1. Street Address or P.O. Box: P.O. Box 355
2. City: Fulton
3. State: MS
4. Zip Code: 38843
5. Email: donald@processandstorage.com
6. Telephone No.: 256-717-8823
7. Fax No.:

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Facility (Agency Interest) Information — Section A

3. Name and Address of Air Contact *(if different from Facility Contact)*

A. Name: Ashley Kimes Title: Managing Consultant

B. Mailing Address

1. Street Address or P.O. Box: P.O. Box 356
2. City: Sherman 3. State: MS
4. Zip Code: 38869 5. Email: ashley.kimes@trinityconsultants.com
6. Telephone No.: 662-374-3524 7. Fax No.: N/A

4. Name and Address of the Responsible Official for the Facility

The Responsible Official is defined as one of the following:

a. For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated in accordance with corporate procedures.

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

c. For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For purposes of these regulations, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA). A principal executive officer of a military facility includes the facility commander, chief executive officer, or any other similar person who performs similar policy or decision-making functions for the institution.

A. Name: John Sumner Title: CEO

B. Mailing Address

1. Street Address or P.O. Box: P.O. Box 355
2. City: Fulton 3. State: MS
4. Zip Code: 38843 5. Email: john@nmr.energy
6. Telephone No.: 850-572-0398 7. Fax No.: N/A

C. Is the person above a duly authorized representative and not a corporate officer? ☐ Yes ☐ No

If yes, has written notification of such authorization been submitted to MDEQ?

☐ Yes ☐ No ☐ Request for authorization is attached

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Facility (Agency Interest) Information — Section A

5. Type of Permit Application *(Check all that apply)*

State Permit to Construct (i.e., non-PSD or PSD avoidance)

☒ Initial Application ☐ Modification

New Source Review (NSR) Permit to Construct (includes both Prevention of Significant Deterioration (PSD) and Nonattainment)

☐ Initial Application ☐ Modification

Title V Operating Permit

☐ Initial Application

☐ Re-issuance: *Are any modifications to the permit/facility being requested?* ☐ Yes ☐ No

(If yes, provide a separate sheet identifying the modification(s) and resulting change to emissions.)

☐ Modification (*Specify type):* ☐ Significant ☐ Minor ☐ Administrative

Synthetic Minor Operating Permit *(Appendix B must be completed and attached.)*

☐ Initial Application

☐ Re-issuance: *Are any modifications to the permit/facility being requested? If yes, address such on a separate sheet.* ☐ Yes ☐ No

☐ Modification

State Permit to Operate a Significant Minor Source *(defined in 11 Miss. Admin. Code Pt. 2, R.2.1.C(25).)*

☐ Initial Application

☐ Re-issuance: *Are any modifications to the permit/facility being requested? If yes, address such on a separate sheet.* ☐ Yes ☐ No

☐ Modification

True Minor Determination

☐ Uncontrolled potential to emit air pollutants is below the Title V thresholds

6. Process/Product Details

A. List Significant Raw Materials *(if applicable)*:
Southern yellow pine logs and chips

B. List All Products *(if applicable)*: torrefied pellets

C. Brief Description of Principal Process(es):
Logs are chipped then dried to essentially zero moisture before being hammered into fine particles to then be compressed into pellets.

Facility (Agency Interest) Information — Section A

6. Process/Product Details (continued)

D. Maximum Throughput for Raw Material(s) *(if applicable)*:

Raw Material	Throughput	Units
Whole Logs/Chips	551,155	tpy

E. Maximum Throughput for Principal Product(s) *(if applicable)*:

Product	Throughput	Units
Pellets	165,347	tpy

7. Facility Operating Information

A. Number of employees at the facility: 80+

		Average Actual	Maximum Potential
B.	Hours per day the facility will operate:	24	24
C.	Days per week the facility will operate:	7	7
D.	Weeks per year the facility will operate:	52	52
E.	Months the facility will operate:	12	12

8. Maps

A. Attach a topographical map of the area extending to at least ½ mile beyond the property boundaries. The map must show the outline of the property boundaries.

B. Attach a site map/diagram showing the outline of the property, an outline of all buildings and roadways on the site, and the location of each significant air emission source.

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Facility (Agency Interest) Information — Section A

9. Zoning

A. Is the facility (either existing or proposed) located in accordance with any applicable city and/or county zoning ordinances? If no, please explain.
Yes

B. Is the facility (either existing or proposed) required to obtain any zoning variance to locate/expand the facility at this site? If yes, please explain.
No

10. Risk Management Plan

A. Is the facility required to develop and register a risk management plan pursuant to Section 112(r), regulated under 40 CFR Part 68? ☐ Yes ☒ No

B. If yes, to whom was the plan submitted? _____
Date submitted: _____

11. *Is confidential information being submitted with this application?* ☐ Yes ☒ No

If so, please follow the procedures outlined in the Mississippi Code Ann. Sections 49-17-39 and 17-17-27(6), as outlined in MCEQ-2 – "Regulation regarding the review and reproduction of public records".

12. MS Secretary of State Registration / Certificate of Good Standing

No permit will be issued to a company that is not authorized to conduct business in Mississippi. If the company applying for the permit is a corporation, limited liability company, a partnership or a business trust, the application package should include proof of registration with the Mississippi Secretary of State and/or a copy of the company's Certificate of Good Standing. The name listed on the permit will include the company name as it is registered with the Mississippi Secretary of State.

It should be noted that for an application submitted in accordance with 11 Miss. Admin. Code Pt. 2, R. 2.8.B. to renew a State Permit to Operate or in accordance with 11 Miss. Admin. Code Pt. 2, R. 6.2.A(1)(c). to renew a Title V Permit to be considered timely and complete, the applicant shall be registered and in good standing with the Mississippi Secretary of State to conduct business in Mississippi.

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Facility (Agency Interest) Information — Section A

13. Certification

Note: If approved by MDEQ, a duly authorized representative (DAR) may sign the air permit application. The DAR must be listed in Section 4 of this application.

I certify that to the best of my knowledge and belief formed after reasonable inquiry, the statements and information in this application are true, complete, and accurate, and that as a responsible official, my signature shall constitute an agreement that the applicant assumes the responsibility for any alteration, additions, or changes in operation that may be necessary to achieve and maintain compliance with all applicable Rules and Regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

John Sumner — **Signature of Responsible Official/DAR**

8/8/25 — **Date**

John Sumner — **Printed Name**

CEO — **Title**

Section B.0: Emission Point Descriptions & Status

This form should list all the of the Emission Points and descriptions as proposed or as otherwise identified in an existing permit. This worksheet should be updated to reflect changes to the Status of the emission points over time. Emission Point ID's should match those assigned in the current MDEQ permit. Facility ID is optional. For proposed emission points, the facility should leave the Emission Point ID blank but may complete the Facility ID (if any). Under "Status," for Emission Points that are proposed or under construction but not yet operating, indicate their status as "Proposed." For emissions points already operating or for which construction has been certified complete, indicate their status as "Operating." Include all control devices for each emission point and the pollutant(s) the device controls. Control devices may be specified in general terms (e.g., baghouse, catalytic oxidizer, fabric filter, wet ESP, etc.). When an Emission Point is removed, indicate so by changing the "Status" to "Removed." Remove the emissions on the subsequent worksheets or indicate they are removed with a "-" for all pollutants.

Emission Point ID	Facility ID	Description	Status	Control Device	Controlled Pollutant(s)	Control Device	Controlled Pollutant(s)	Control Device	Controlled Pollutant(s)
AA-100		Whole Logs and Green Residuals Processing	Proposed						
AA-101		Truck Unloading	Proposed						
AA-102		Whole Log Pile	Proposed						
AA-103		Chipper	Proposed						
AA-104		Green Chips Storage Pile	Proposed						
AA-200		Drying/Torrefication	Proposed						
AA-201		Dryer	Proposed	RTO	VOC, HAP	WESP	PM		
AA-202		Torrefication Systems	Proposed	RTO	VOC, HAP	WESP	PM		
AA-203		RTO Burners	Proposed	RTO	VOC, HAP	WESP	PM		
AA-204		System Bypass Stack	Proposed						
AA-300		Pellet Production Operations	Proposed						
AA-301		Torrefied Material Storage Silo	Proposed	Dust Collector	PM				
AA-302		Dry Hammermill	Proposed	Dust Collector	PM				
AA-303		Pellet Mills and Cooler	Proposed	Dust Collector	PM				
AA-400		Dry Material Handling	Proposed						
AA-401		Torrefied Material Handling	Proposed						
AA-500		Pellets Storage and Loadout	Proposed						
AA-501		Pellet Storage Silo No. 1	Proposed	Dust Collector	PM				
AA-502		Pellet Storage Silo No. 2	Proposed	Dust Collector	PM				
AA-503		Barge Loadout	Proposed	Dust Collector	PM				
AA-600		Auxiliary Equipment	Proposed						
AA-601		Boiler	Proposed						
AA-602		Diesel Fire Pump	Proposed						
IA-001		Paved Roads Traffic	Proposed						

Section B.1: Maximum Uncontrolled Emissions (under normal operating conditions)

Maximum Uncontrolled Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless operating capacity and/or hours of operation are specifically limited in an enforceable permit. (Existing limits on operating conditions, not emissions or use of a control device, may be used when determining uncontrolled emissions.) Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Emissions ≥ 0.01 ton/yr from a specific emission unit must be included. Please do not change the column widths on this table.

Emission Point ID	TSP[1] (PM)		PM-10[1]		PM-2.5[1]		SO_2		NOx		CO		VOC		TRS[2]		Lead		Total HAPs	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AA-101	2.45E-03	1.07E-02	1.16E-03	5.08E-03	1.76E-04	7.69E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-102	2.45E-03	1.07E-02	1.16E-03	5.08E-03	1.76E-04	7.69E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-103	7.36E-03	3.22E-02	3.48E-03	1.52E-02	5.27E-04	2.31E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-104	2.45E-03	1.07E-02	1.16E-03	5.08E-03	1.76E-04	7.69E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-201	100.00	438.00	120.76	528.94	120.76	528.94	0.00	0.00	20.00	87.60	20.00	87.60	200.00	876.00	0.00	0.00	0.00	0.00	8.36	36.62
AA-202																	0.01	0.04	3.26	14.27
AA-203																	0.00	0.00	0.02	0.07
AA-204	100.00	25.00	120.76	30.19	120.76	30.19	0.00	0.00	50.96	12.74	100.04	25.01	113.25	28.31	0.00	0.00	0.00	0.00	8.36	2.09
AA-301	17.14	75.09	17.14	75.09	17.14	75.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-302	101.83	446.01	101.83	446.01	101.83	446.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-303	64.29	281.57	64.29	281.57	64.29	281.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-401	3.25	14.23	1.54	6.73	0.23	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-501	17.14	75.09	17.14	75.09	17.14	75.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-502																				
AA-503	17.14	75.09	17.14	75.09	17.14	75.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-601	0.02	0.07	0.06	0.28	0.06	0.28	0.01	0.02	0.42	1.85	0.71	3.10	0.05	0.20	0.00	0.00	0.00	0.00	0.02	0.07
AA-602	0.07	0.02	0.48	0.12	0.48	0.12	0.45	0.11	1.46	0.36	1.26	0.32	0.54	0.14	0.00	0.00	0.00	0.00	0.01	0.00
IA-001	1.78	7.79	0.36	1.56	0.36	1.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals	422.67	1,438.01	461.52	1,520.69	460.21	1,514.95	0.46	0.13	72.84	102.55	122.01	116.03	313.84	904.65	0.00	0.00	0.01	0.04	20.02	53.13

[1] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

[2] **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide (H_2S), methyl mercaptan (CH_4S), dimethyl sulfide (C_2H_6S), and dimethyl disulfide ($C_2H_6S_2$).

Section B.2: Proposed Allowable Emissions

Proposed Allowable Emissions (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Emissions ≥ 0.01 ton/yr from a specific emission unit must be included. Additional columns may be added if there are regulated pollutants (other than HAPs and GHGs) emitted at the facility. List HAPs in Section B.3 and GHGs in Section B.4 (if applicable).

Emission Point ID	TSP[1]		PM10[1]		PM2.5[1]		SO_2		NOx		CO		VOC		TRS		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AA-101	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-102	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-103	0.01	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-104	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-201	10.00	43.80	12.08	52.89	12.08	52.89	0.00	0.00	20.00	87.60	20.00	87.60	10.00	43.80	0.00	0.00	0.00	0.00
AA-202																	0.01	0.04
AA-203																	0.00	0.00
AA-204	100.00	25.00	120.76	30.19	120.76	30.19	0.00	0.00	50.96	12.74	100.04	25.01	113.25	28.31	0.00	0.00	0.00	0.00
AA-301	0.17	0.75	0.17	0.75	0.17	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-302	1.02	4.46	1.02	4.46	1.02	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-303	0.64	2.82	0.64	2.82	0.64	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-401	3.25	14.23	1.54	6.73	0.23	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-501	0.17	0.75	0.17	0.75	0.17	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-502																		
AA-503	0.17	0.75	0.17	0.75	0.17	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-601	0.02	0.07	0.06	0.28	0.06	0.28	0.01	0.02	0.42	1.85	0.71	3.10	0.05	0.20	0.00	0.00	0.00	0.00
AA-602	0.07	0.02	0.48	0.12	0.48	0.12	0.45	0.11	1.46	0.36	1.26	0.32	0.54	0.14	0.00	0.00	0.00	0.00
IA-001	1.92	7.79	0.38	1.56	0.38	1.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals	117.45	100.50	137.49	101.34	136.18	95.60	0.46	0.13	72.84	102.55	122.01	116.03	123.84	72.45	0.00	0.00	0.01	0.04
[1]	117.45	100.50	137.49	101.34	136.18	95.60	0.46	0.13	72.84	102.55	122.01	116.03	123.84	72.45	0.00	0.00	0.01	0.04

[2] **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide (H_2S), methyl mercaptan (CH_4S), dimethyl sulfide (C_2H_6S), and dimethyl disulfide ($C_2H_6S_2$).

Section B.3: Proposed Allowable Hazardous Air Pollutants (HAPs)

Proposed Allowable HAPs (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Select an individual HAP from the dropdown list provided. **Emissions ≥ 0.01 ton/yr of an individual HAP from a specific emission unit must be provided.** Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or are below the reporting threshold. Select the appropriate HAP from the drop down menu in the header cell of the given column in the table below. Additional columns may be added as necessary to address each HAP.

Emission Point ID	Total HAPs		Acetaldehyde		Acrolein		Arsenic Compounds		Benzene		Chlorine		Chromium Compounds		Formaldehyde		Hydrogen Chloride		Hexane		Manganese		Methanol		Nickel Compounds		Phenol		Propionaldehyde		Toluene	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AA-101	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-201	0.51	2.22	0.10	0.45	0.02	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.58	0.11	0.47	0.00	0.00	0.00	0.00	0.10	0.45	0.00	0.00	0.03	0.12	0.01	0.05	0.00	0.00
AA-202	1.40	6.12	0.01	0.03	0.03	0.15	0.00	0.02	0.04	0.16	0.01	0.03	0.00	0.02	0.04	0.16	0.97	4.24	0.02	0.07	0.27	1.19	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.01	0.03
AA-203	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-204	8.36	2.09	2.08	0.52	0.43	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64	0.66	0.36	0.09	0.00	0.00	0.00	0.00	2.08	0.52	0.00	0.00	0.53	0.13	0.25	0.06	0.00	0.00
AA-301	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-302	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-401	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-501	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-502	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
AA-503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-601	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA-602	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IA-001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals:	10.29	10.51	2.19	1.00	0.49	0.35	0.00	0.02	0.04	0.16	0.01	0.03	0.00	0.02	2.81	1.41	1.44	4.81	0.03	0.14	0.27	1.19	2.18	0.97	0.01	0.02	0.55	0.25	0.26	0.12	0.01	0.03

Section B.4: Greenhouse Gas (GHG) Emissions

This form is required for facilities that have or will require a Title V Operating Permit and for all industries in the energy and oil and gas sectors (i.e., SIC codes beginning with 13, 29, 46, and 49). Proposed Allowable GHGs (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard; or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Applicants must report potential emission rates in SHORT TONS per year, as opposed to metric tons required by Part 98. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Only those emission points with emissions of greenhouse gases are required to be provided on this form.

		CO_2 (non-biogenic) ton/yr	CO_2 (biogenic)[2] ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC[3] ton/yr				Total GHG Mass Basis ton/yr[5]	Total CO_2e ton/yr[6]
Emission Point ID	**GWPs [1]**	**1**	**1**	**265**	**28**	**22,800**	**footnote 4**					
AA-201 - AA-203	**mass GHG**	85,490.77	-	6.90	5.25	-	-				85,502.91	-
	CO_2e	87,465.25	-	1,827.37	147.11	-	-				-	89,439.73
AA-601	**mass GHG**	4,433	-	8.14E-06	8.14E-05	-	-				4,432.98	-
	CO_2e	4,433	-	2.16E-03	2.28E-03	-	-				-	4,432.99
AA-602	**mass GHG**	63.25	-	5.09E-04	2.55E-03	-	-				63.25	-
	CO_2e	63.46	-	1.35E-01	7.13E-02	-	-				-	63.66
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
	mass GHG											
	CO_2e											
FACILITY TOTAL	**mass GHG**	89,986.99	-	6.90	5.26	-	-				89,999.15	-
	CO_2e	91,961.68	-	1,827.51	147.18	-	-				-	93,936.38

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] Biogenic CO2 is defined as carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms.

[3] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[4] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[5] Greenhouse gas emissions on a **mass basis** is the ton per year greenhouse gas emission before adjustment with its GWP. Include both biogenic and non-biogenic GHG in this total.

[6] **CO_2e** means Carbon Dioxide Equivalent and is calculated by multiplying the ton/yr mass emissions of the greenhouse gas by its GWP. Include both biogenic and non-biogenic CO_2e in this total.

Section B.5: Stack Parameters and Exit Conditions

Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit.

Emission Point ID	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Base Elevation (ft)	Exit Temp. (^{o}F)	Inside Diameter or Dimensions (ft)	Velocity (ft/sec)	Moisture by Volume (%)	Geographic Position (degrees/minutes/seconds)	
									Latitude	Longitude
AA-101	All stacks and relevant information are TBD.									
AA-102										
AA-103										
AA-104										
AA-201										
AA-202										
AA-203										
AA-204										
AA-301										
AA-302										
AA-303										
AA-401										
AA-501										
AA-502										
AA-503										
AA-601										
AA-602										

[1] A WAAS-capable GPS receiver should be used and in the WGS84 or NAD83 coordinate system.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Fuel Burning Equipment – External Combustion Sources | Section C

1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-201 - AA-202

B. Equipment Description: Two (2) burners combust the syngas produced from torrefication and route back to dry chips in the dryer and torrefication units. Natural gas is used for start-up and to supplement syngas as needed.

C. Manufacturer: TBD D. Model Yr. and No.: TBD

E. Maximum Heat Input: 85 each MMBtu/hr

F. For units subject to NSPS Db, is the heat release rate > 70,000 Btu/hr-ft^3? ☐ Yes ☒ No

G. Use: ☐ Electrical Generation ☐ Steam ☒ Process Heat

☐ Space Heat ☐ Standby/Emergency ☐ Other (describe): _____

H. Heat Mechanism: ☐ Direct ☒ Indirect

I. Burner Type (e.g., pulverized coal, forced draft, atomizing oil, low-NO_x, etc.): Traditional burners

J. Additional Design Controls (e.g., FGR, etc.): N/A

K. Status: ☐ Operating ☒ Proposed ☐ Under Construction

L. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Fuel Type

Complete the following table, identifying each type of fuel and the amount used. Specify the units for heat content, hourly usage, and yearly usage.

FUEL TYPE[1]	HEAT CONTENT (higher heating value – HHV)	% SULFUR	% ASH	MAXIMUM HOURLY USAGE	MAXIMUM YEARLY USAGE
Syngas	4,210 btu/lb – wet	unknown	2.6	85 MMBtu	744,600 MMBtu
Natural Gas	1020 btu/scf	Negligible	Negligible	85 MMBtu	744,600 MMBtu

Please list any fuel components that are hazardous air pollutants and the percentage in the fuel:

[1] Boilers burning solid waste may be considered "solid waste incinerators" for purposes of complying with federal regulations. However, you are only required to complete Section C, not I, of this application as long as the wastes combusted are indicated in the table above.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Fuel Burning Equipment – External Combustion Sources | Section C

1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-601

B. Equipment Description: Natural gas-fired boiler used to produce steam.

C. Manufacturer: TBD D. Model Yr. and No.: TBD

E. Maximum Heat Input: 8.6 MMBtu/hr

F. For units subject to NSPS Db, is the heat release rate > 70,000 Btu/hr-ft^3? ☐ Yes ☒ No

G. Use: ☐ Electrical Generation ☒ Steam ☐ Process Heat

☐ Space Heat ☐ Standby/Emergency ☐ Other (describe): _____

H. Heat Mechanism: ☐ Direct ☒ Indirect

I. Burner Type (e.g., pulverized coal, forced draft, atomizing oil, low-NO_x, etc.): Low NO_X

J. Additional Design Controls (e.g., FGR, etc.): N/A

K. Status: ☐ Operating ☒ Proposed ☐ Under Construction

L. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Fuel Type

Complete the following table, identifying each type of fuel and the amount used. Specify the units for heat content, hourly usage, and yearly usage.

FUEL TYPE[1]	HEAT CONTENT (higher heating value – HHV)	% SULFUR	% ASH	MAXIMUM HOURLY USAGE	MAXIMUM YEARLY USAGE
Natural Gas	1020 Btu/scf	Negligible	Negligible	8.6 MMBtu	75,336 MMBtu

Please list any fuel components that are hazardous air pollutants and the percentage in the fuel:

_____

[1] Boilers burning solid waste may be considered "solid waste incinerators" for purposes of complying with federal regulations. However, you are only required to complete Section C, not I, of this application as long as the wastes combusted are indicated in the table above.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Fuel Burning Equipment – Internal Combustion Sources — Section D

1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-602

B. Equipment Description: Emergency diesel fire pump engine

C. Manufacturer: TBD D. Model Yr. and No.: TBD

E. Maximum Heat Input (higher heating value): 0.56 MMBtu/hr

F. Rated Power: 220 hp 164.1 kW

G. Use: ☐ Non-emergency ☒ Emergency

Complete H through Q for Reciprocating (Piston) Internal Combustion Engines

H. Displacement per cylinder: ☒ < 10 Liters ☐ 10 to <30 Liters ☐ ≥ 30 Liters

I. Engine Ignition Type: ☐ Spark Ignition ☒ Compression Ignition

J. Engine Burn Type: ☒ 4-stroke ☐ 2-stroke ☐ Rich Burn ☐ Lean Burn
(J. should be answered for Compression Ignition only)

K. Design Controls (e.g., catalytic converter, diesel particulate filter, SCR, etc.)

L. Status: ☐ Operating ☒ Proposed ☐ Under Construction

M. Engine manufactured or reconstructed date: TBD N. Engine order date: TBD

O. Is the engine certified by EPA to meet the applicable emissions standards? ☒ Yes ☐ No

P. If an emergency engine, can your engine be operated for Emergency Demand Response per the NERC Reliability Standard? ☐ Yes ☒ No

Q. If an emergency engine, is it used for peak shaving or non-emergency demand response? ☐ Yes ☒ No

Complete R through T for Stationary Gas Turbines

R. Turbine Type: ☐ Simple Cycle ☐ Regenerative Cycle ☐ Combined Cycle ☐ Combined Heat and Power (Cogeneration)

S. Controls: ☐ Water-Steam Injection ☐ Lean Premix ☐ Other Controls (SCR, oxidation catalyst, etc.):

T. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction:

2. Fuel Type

Complete the following table, identifying each type of fuel and the amount used. Specify units of measurement.

FUEL TYPE	HEAT CONTENT	% SULFUR	% ASH	MAXIMUM HOURLY USAGE	MAXIMUM YEARLY USAGE
Diesel	139,000 Btu/gal	0.0015%	0%	4.03 gal	2,014 gal

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-103

B. Process Description: Chipper – whole logs (including bark) are chipped and then screened for the appropriate size. Chips that are too large are re-chipped along with chips received by truck.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 551,155 tpy (green chips or whole logs)
Equivalent to: 62.92 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Whole Logs	62.92 tons	62.92 tons	551,155 tons
Green Chips	18.88 tons	18.88 tons	165,347 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Green Chips	62.92 tons	62.92 tons	551,155 tons

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Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-302

B. Process Description: A Dry Hammermill is used to process torrefied material into smaller particles.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 260,718 tpy
Equivalent to: 29.76 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Torrefied Material	29.76 tons	29.76 tons	260,718 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Torrefied Material	29.76 tons	29.76 tons	260,718 tons

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Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-303

B. Process Description: Pelletizing – includes 6 pellet mills where steam is added to torrefied material in pelletizing process, and a pellet cooler where the pellets cool down to ambient temperature.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 165,347 tpy
Equivalent to: 18.88 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Torrefied Material	18.88 tons	18.88 tons	165,347 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Pellets	18.88 tons	18.88 tons	165,347 tons

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Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-201

B. Process Description: Rotary Dryer – green chips will be dried before being transferred to two (2) torrefication units. Heat will be supplied by torrefication burners that combust syngas and natural gas.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 551,155 tons (green chips or whole logs)
Equivalent to: 62.92 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Whole Logs	62.92 tons	62.92 tons	551,155 tons
Green Chips	18.88 tons	18.88 tons	165,347 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Dry Chips	29.76 tons	29.76 tons	260,718 tons

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Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-202

B. Process Description: Torrefication Systems – dried chips will be thermally treated in an oxygen deficient atmosphere at a relatively low temperature in two (2) torrefiers. Heat will be supplied by two (2) burners, which combusts the torrefier exhaust gas (i.e., syngas). When needed, natural gas is combusted in these burners.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 551,155 tpy
Equivalent to: 62.92 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Dry Chips	62.92 tons	62.92 tons	551,155 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Torrefied Material	29.76 tons	29.76 tons	260,718 tons

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-301

B. Process Description: Torrefied Material Storage Silo – torrefied material is stored in a silo before transfer to the hammermill.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 260,718 tpy
Equivalent to: 29.76 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Torrefied Material	29.76 tons	29.76 tons	260,718 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Torrefied Material	29.76 tons	29.76 tons	260,718 tons

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-501 – AA-502

B. Process Description: Pellet Storage Silos – includes two (2) silos that store pellets before off-site shipment.

C. Manufacturer: TBD D. Model: TBD

E. Max. Design Capacity (specify units): 165,347 tpy
Equivalent to: 18.88 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Pellets	18.88 tons	18.88 tons	165,347 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Pellets	18.88 tons	18.88 tons	165,347 tons

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Manufacturing Processes — Section E

1. Emission Point Description

A. Emission Point Designation (Ref.: No.): AA-503

B. Process Description: Pellet Loadout – Pellets are transferred from storage silos (AA-501 – AA-502) into barges to be shipped off-site.

C. Manufacturer: N/A D. Model: N/A

E. Max. Design Capacity (specify units): 165,347 tpy
Equivalent to: 18.88 tons/hr

F. Status: ☐ Operating ☒ Proposed ☐ Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

H. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: ~ Dec 2025

2. Raw Material Input

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Pellets	18.88 tons	18.88 tons	165,347 tons

3. Product Output

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR MAXIMUM
Pellets	18.88 tons	18.88 tons	165,347 tons

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Baghouses/Fabric Filters — Section L1

1. Baghouse Description

A. Emission Point Designation (Ref. No.): AA-301, AA-302, AA-303, AA-501, AA-502, AA-503

B. Equipment Description (include the process(es) that the baghouse controls emissions from): Specifics to the control equipment is still TBD, but expecting to control PM on the torrefied material storage silo, dry hammermill, pellet mills/pellet cooler, pellet storage silos, and barge loadout.

C. Manufacturer: TBD D. Model: TBD

E. Status: ☐ Operating ☒ Proposed ☐ Under Construction

2. Baghouse Data

A. Cloth Area: TBD ft^2 B. Air to cloth ratio: >3:1 $acfm/ft^2$

C. Type of bag: ☐ Woven ☐ Felted ☒ Membrane ☐ Other: _____

D. Filter Material: PPS E. Max. Filter Operating Temp.: Ambient °F

F. No. of compartments: TBD G. No. of bags per compartment: TBD

H. Bag length: TBD ft I. Bag diameter: TBD ft

J. Pressure drop: TBD in. H_2O K. Inlet air flow rate: TBD acfm

L. Air temperature: Ambient °F M. Efficiency (PM): 99 %

N. Is a pressure measurement device installed? ☒ Yes ☐ No Warning alarm? ☐ Yes ☐ No

O. Dirty air is on…: ☐ Inside of bag ☒ Outside of bag

P. Time between bag cleaning (specify units): TBD ☒ Automatic ☐ Timed ☐ Manual

Q. Method of cleaning: ☐ Shaking ☐ Reverse Air ☒ Pulse Jet ☐ Other: _____

R. Are extra bags readily available? ☒ Yes ☐ No If yes, how many? TBD

S. Method for determining when to replace bags: ☒ Alarm ☐ Internal Inspection ☐ Visible Emission ☐ Other: _____

T. How is the collected dust stored, handled, and disposed of?
Reused in system.

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Oxidation Systems — Section L4

1. Oxidation Equipment Description

A. Emission Point Designation (Ref. No.): AA-201 – AA-203

B. Equipment Description (include the process(es) that oxidation system controls emissions from): Dryer, torrefication units, and burner emissions are routed to a Wet ESP then to a RTO. There is one dryer and two torrefication units which are routed to one Wet ESP and one RTO.

C. Manufacturer: TBD D. Model: TBD

E. Status: ☐ Operating ☒ Proposed ☐ Under Construction

2. Oxidation System Data

A. Type of Oxidation Process:

- ☐ Afterburner
- ☐ Recuperative Thermal Oxidizer
- ☒ Regenerative Thermal Oxidizer
- ☐ Other:
- ☐ Flare
- ☐ Recuperative Catalytic Oxidizer
- ☐ Regenerative Catalytic Oxidizer

B. Efficiency: 95 % Controlling the following pollutant(s): VOC
Efficiency: 95 % Controlling the following pollutant(s): VHAP

C. Inlet air flow rate: TBD acfm

D. Combustion chamber temperature: Minimum: 70 °F Maximum: 70 °F

E. Maximum burner rating: 8.7 MMBtu/hr F. Fuel type: Natural Gas

G. Fuel usage rate (specify units): H. Sulfur in Fuel: 0 wt %

I. Residence time: TBD seconds J. Percent excess air: TBD %

K. Combustion chamber volume: TBD ft^3

L. VOC Concentration: Inlet: 311 ppmv Outlet: TBD ppmv

Oxidation Systems — Section L4

2. Oxidation System Data (continued)

M. Catalyst Data (if applicable): N/A

1. Catalyst type: _____
2. Catalyst volume: _____ ft^3
3. How is spent catalyst disposed of? _____

N. Flare Data (if applicable): N/A

1. Flare type: ☐ Non-assisted ☐ Steam-assisted ☐ Air-assisted ☐ Other: _____
2. Net heating value of combusted gas: _____ Btu/scf
3. Design exit velocity: _____ ft/sec
4. Is the presence of a flare pilot flame monitored? ☐ Yes ☐ No

   If yes, please describe the monitoring: _____

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Electrostatic Precipitators (ESP) — Section L6

1. Electrostatic Precipitator Description

A. Emission Point Designation (Ref. No.): AA-201 – AA-203

B. Equipment Description (include the process(es) that ESP controls emissions from):
Dryer, torrefication units, and burner emissions are routed to a Wet ESP then to a RTO. There is one dryer and two torrefication units which are routed to one Wet ESP and one RTO.

C. Manufacturer: TBD D. Model: TBD

E. Status: ☐ Operating ☒ Proposed ☐ Under Construction

2. Electrostatic Precipitator Data

A. Precipitator Type: ☒ Wet ☐ Dry ☐ Single-stage

☐ Two-stage ☐ Other: _____

B. Efficiency: 90 % Controlling the following pollutant(s): PM

C. Inlet air flow rate: TBD acfm

D. Pressure Drop: TBD in. of H_2O

E. Inlet Temperature: TBD ^oF

F. Total collection plate area: TBD ft^2

G. Collector Plate Size: Length: TBD ft Width: TBD ft

H. Gas Viscosity: TBD poise

I. Pollutant Resistivity: TBD ohm-cm

J. Field strength: Charging: TBD volts Collecting: TBD volts

K. No. of fields: TBD

L. No. of collector plates per field: TBD

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Electrostatic Precipitators (ESP) — Section L6

2. Electrostatic Precipitator Data (continued)

M. Spacing between collector plates: TBD in.

N. No. of compartments: TBD

O. No. of discharge electrodes: TBD

P. Corona Power: TBD watts/1000cfm

Q. Electrical Usage: TBD kW/hr

R. Cleaning Method: ☐ Plate Rapping ☐ Plate Vibrating ☐ Washing

☐ Other: _____

S. Rapper Frequency: TBD min/cycle ☐ Automatic ☐ Manual

T. Is flue gas conditioning required? ☐ Yes ☐ No

U. Fan location relative to precipitator: ☐ Upstream ☐ Downstream

V. How is the collected dust stored, handled, and disposed of?
TBD

W. List the electrical conditions per field:

FIELD NO.	VOLTAGE (kV)	AMPERAGE (mA)
TBD		

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Recordkeeping — Section M8

1. Applicable Emission Point Description

A. Emission Point Designation (Ref. No.): Facility-Wide

B. Emission Point Description: Facility-Wide

C. For what emission limit or standard does the recordkeeping demonstrate compliance?
≤ 9 tons/12-month rolling period for individual HAP emissions; ≤ 24 tons/12-month rolling period for total HAP emissions

D. Is there an applicable underlying requirement for the recordkeeping?
☒ Yes ☐ No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…, etc.)?
HAP synthetic minor source

2. Recordkeeping Information

A. Data/information recorded:

Parameter/Material	Units	Recordkeeping Frequency	Sampling and analysis method (e.g., EPA Method 24)
Individual HAPs	tons	Monthly	Record monthly and 12-month rolling total emissions
Total HAPs	tons	Monthly	Record monthly and 12-month rolling total emissions

B. Compliance is determined…:

☐ Daily ☐ Weekly ☒ Monthly

☐ Other: _____

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Recordkeeping — Section M8

1. Applicable Emission Point Description

A. Emission Point Designation (Ref. No.): AA201 – AA203

B. Emission Point Description: Dryer and Torrefication Systems

C. For what emission limit or standard does the recordkeeping demonstrate compliance?
WESP: Secondary voltage for each field, secondary current for each field, total power for unit (3-hr average total power)
RTO: Minimum combustion temperature (3-hr average temperature)

D. Is there an applicable underlying requirement for the recordkeeping?
☒ Yes ☐ No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…, etc.)?
PSD Avoidance (40 CFR 51.166)

2. Recordkeeping Information

A. Data/information recorded:

Parameter/Material	Units	Recordkeeping Frequency	Sampling and analysis method (e.g., EPA Method 24)
WESP: Secondary Voltage	kV	3-hr average	Continuous voltage monitor
WESP: Secondary Current	ma	3-hr average	Continuous current monitor
WESP: Total Power	W	3-hr average	Total Power = Secondary Voltage * Secondary Current (sum for all fields)
RTO: Temperature	F	3-hr average	Continuous temperature monitor (combustion zone of RTO)

B. Compliance is determined…:

☐ Daily ☐ Weekly ☐ Monthly

☒ Other: Continuous

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Applicable Requirements and Status — Section N

1. Summary of Applicable Requirements

Provide a list of all applicable federal standards for which your facility is or will be subject to, as well as a list of all Construction Permits establishing limits or restrictions issued to your facility. The specific emission standards and limitations applicable to each emission point shall be provided on the following pages (Parts 2 and 3).

Federal Regulations:

40 CFR Part	Subpart
60	IIII
63	ZZZZ

State Construction Permits[1]:

	MM/DD/YY[2]	PSD	PSD Avoidance[3]	Other
Permit to Construct issued:		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

[1] Any Construction Permits containing requirements that are currently applicable to the facility should be addressed in this section.
[2] If the permit has been modified, give the most recent modification date.
[3] Because permits are issued on a pollutant-by-pollutant basis, a PSD permit may be significant for one pollutant while also containing PSD avoidance limits for another pollutant. Therefore, you may check multiple boxes for each permit.

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Applicable Requirements and Status — Section N

2. Current Applicable Requirements

List all applicable state and federal requirements to the level of detail needed to identify each applicable emission standard and/or work practice standard and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Applicable provisions from any relevant Permit to Construct shall also be listed. Provide the compliance status as of the day the application is signed.

EMISSION POINT NO.	APPLICABLE REQUIREMENT (Regulatory citation)	POLLUTANT	LIMITS/ REQUIREMENTS	TEST METHOD/ COMPLIANCE MONITORING	COMPLIANCE STATUS (In/Out)[1,2]
N/A					

[1] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

[2] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(c).

Applicable Requirements and Status — Section N

3. Future Applicable Requirements

List all future applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring to be used to demonstrate compliance with each applicable requirement. Applicable provisions from any Permit to Construct for which certification of construction has not yet been submitted shall also be listed.

EMISSION POINT NO.	FUTURE APPLICABLE REQUIREMENT (Regulation citation)	POLLUTANT	LIMITS/ REQUIREMENTS	TEST METHOD/ COMPLIANCE MONITORING	COMPLIANCE DATE[1]
Facility Wide	11 Miss. Admin. Code Pt. 2, R.1.3.A(1)-(2) & B	PM	≥ 40%, up to 15 minutes per startup in any 1 hour, not to exceed 3 startups in any 24 hour period.	EPA Ref. Method 9	Upon Operation Commencement
Facility Wide	PSD Avoidance (40 CFR 51.166)	PM_{10} NO_x CO	249 tpy	Recordkeeping	Upon Operation Commencement
AA-201, AA-202, AA-203, AA-601, AA-602	11 Miss. Admin. Code Pt. 2, R.1.3.D(1)(a)	PM	0.6 lb/MMBtu Heat Input	EPA Ref. Methods 1-5	Upon Operation Commencement
AA-201, AA-202	11 Miss. Admin. Code Pt. 2, R.1.3.D(1)(b)	PM	$E = 0.8808 \times I^{-0.1667}$	EPA Ref. Methods 1-5	Upon Operation Commencement
AA-100, AA-300	11 Miss. Admin. Code, Pt. 2, R.1.3.F	PM	$E = 4.1(p)^{0.67}$	EPA Ref. Methods 1-5	Upon Operation Commencement
AA-201, AA-202, AA-203, AA-601	11 Miss. Admin. Code, Pt. 2., R.1.4.A(1)	SO_2	4.8 lb/MMBtu	EPA Ref. Method 6	Upon Operation Commencement
AA-602	40 CFR 63 Subpart IIII: 60.4202(a)(2), 60.4205(c), 60.4207, 60.4211(e), 60.4214(b)	PM NO_x CO	Certification from manufacturer that pump engine meets emission standards set forth in Table 4; install a non-resettable hour meter; limit hours of operation to 100 hours per year for nonemergency	Recordkeeping	Upon Operation Commencement

[1] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(2). for Title V sources, I (the applicant) am certifying that I will meet future applicable requirements which will become effective during the permit term on a timely basis.

Applicable Requirements and Status — Section N

3. Future Applicable Requirements

List all future applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring to be used to demonstrate compliance with each applicable requirement. Applicable provisions from any Permit to Construct for which certification of construction has not yet been submitted shall also be listed.

EMISSION POINT NO.	FUTURE APPLICABLE REQUIREMENT (Regulation citation)	POLLUTANT	LIMITS/ REQUIREMENTS	TEST METHOD/ COMPLIANCE MONITORING	COMPLIANCE DATE[1]
			scenarios; keep records of maintenance and hours of operation; Use only ultra-low sulfur diesel in engine.		
AA-602	40 CFR 63 Subpart ZZZZ	HAP	Compliance with Subpart ZZZZ is demonstrated by compliance with the requirements of Subpart IIII.	Recordkeeping	Upon Operation Commencement

[1] Per 11 Miss. Admin. Code Pt. 2, R. 6.2.C(8)(b)(2). for Title V sources, I (the applicant) am certifying that I will meet future applicable requirements which will become effective during the permit term on a timely basis.

FORM 5	MDEQ	MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT

Insignificant Activities *(for Title V facilities only)* — Appendix A

1. List of Insignificant Activities

List all insignificant activities identified in 11 Miss. Admin. Code Pt. 2, R. 6.7., with the exception of those in 11 Miss. Admin. Code Pt. 2, R.6.7.A.
IA-001, Paved Roads Traffic

2. Emissions Information

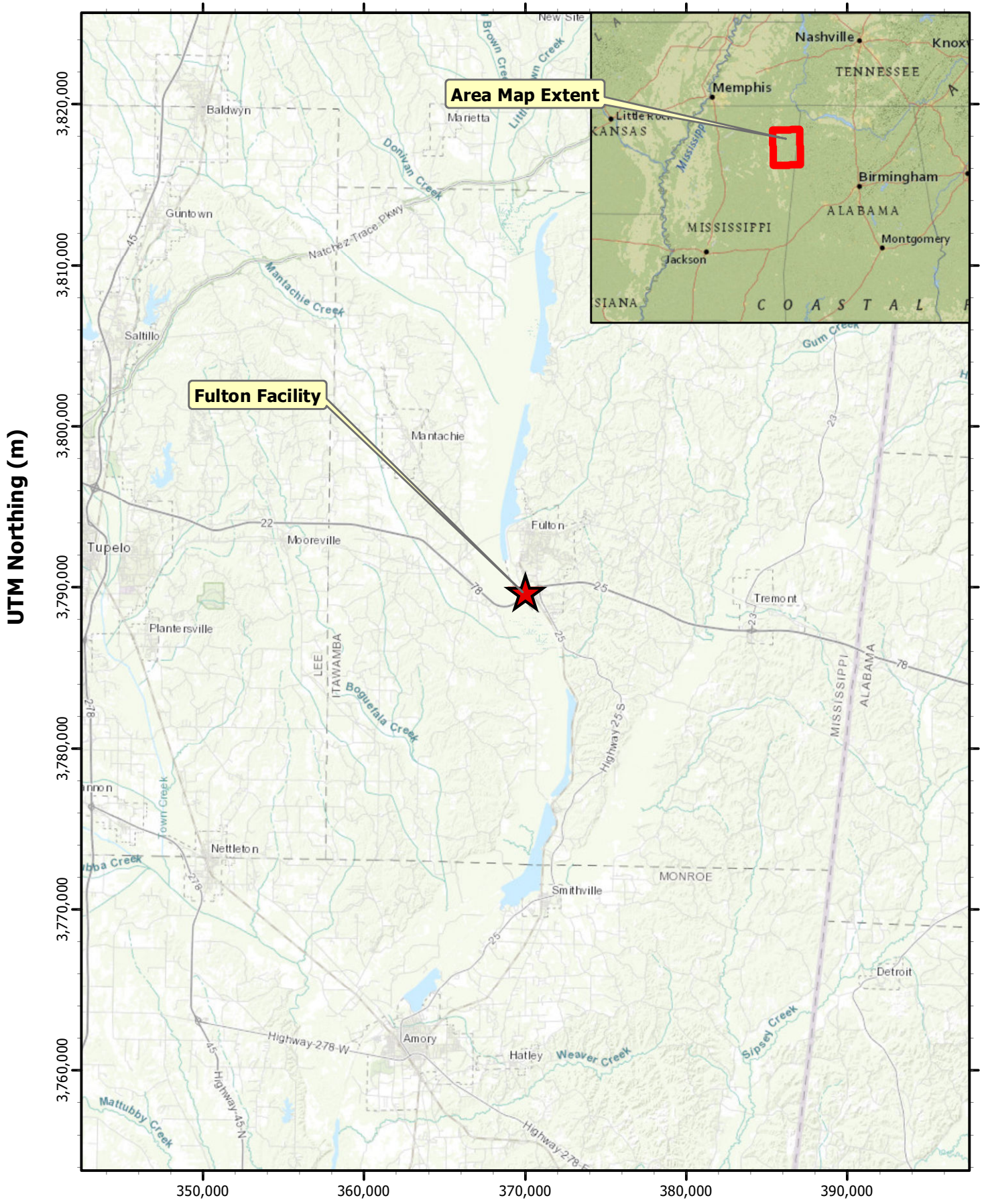
List the total emissions for each regulated pollutant from the combined insignificant activities listed above in accordance with the Permit Application Instructions *(calculations not needed unless requested by DEQ)*.

POLLUTANT	POTENTIAL TO EMIT	
	lb/hr	tons/yr
PM	1.92	7.79
PM_{10}	0.38	1.56
$PM_{2.5}$	0.38	1.56

APPENDIX B. AREA MAP, SITE MAP, AND PROCESS FLOW DIAGRAM

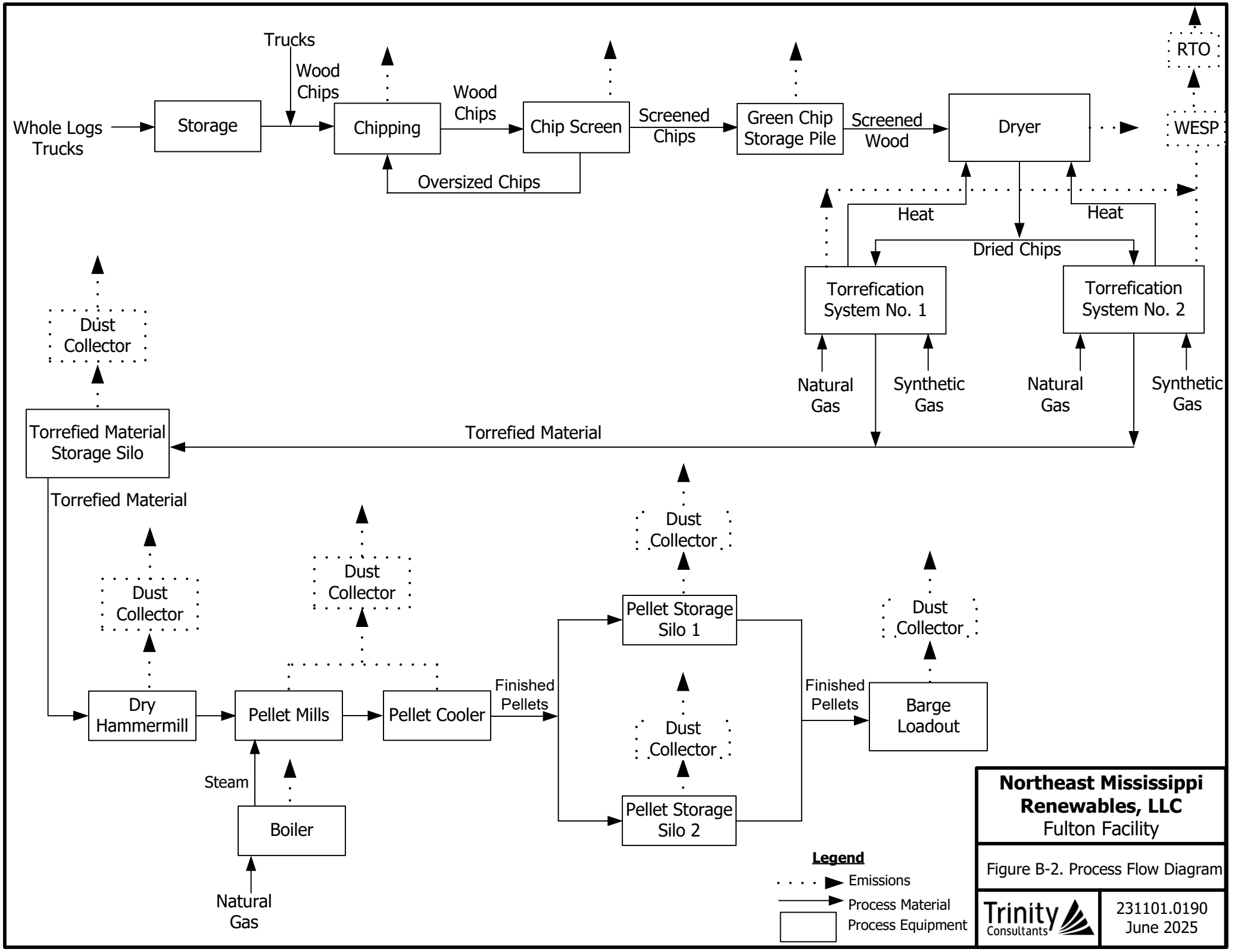
Figure B-1. Area Map

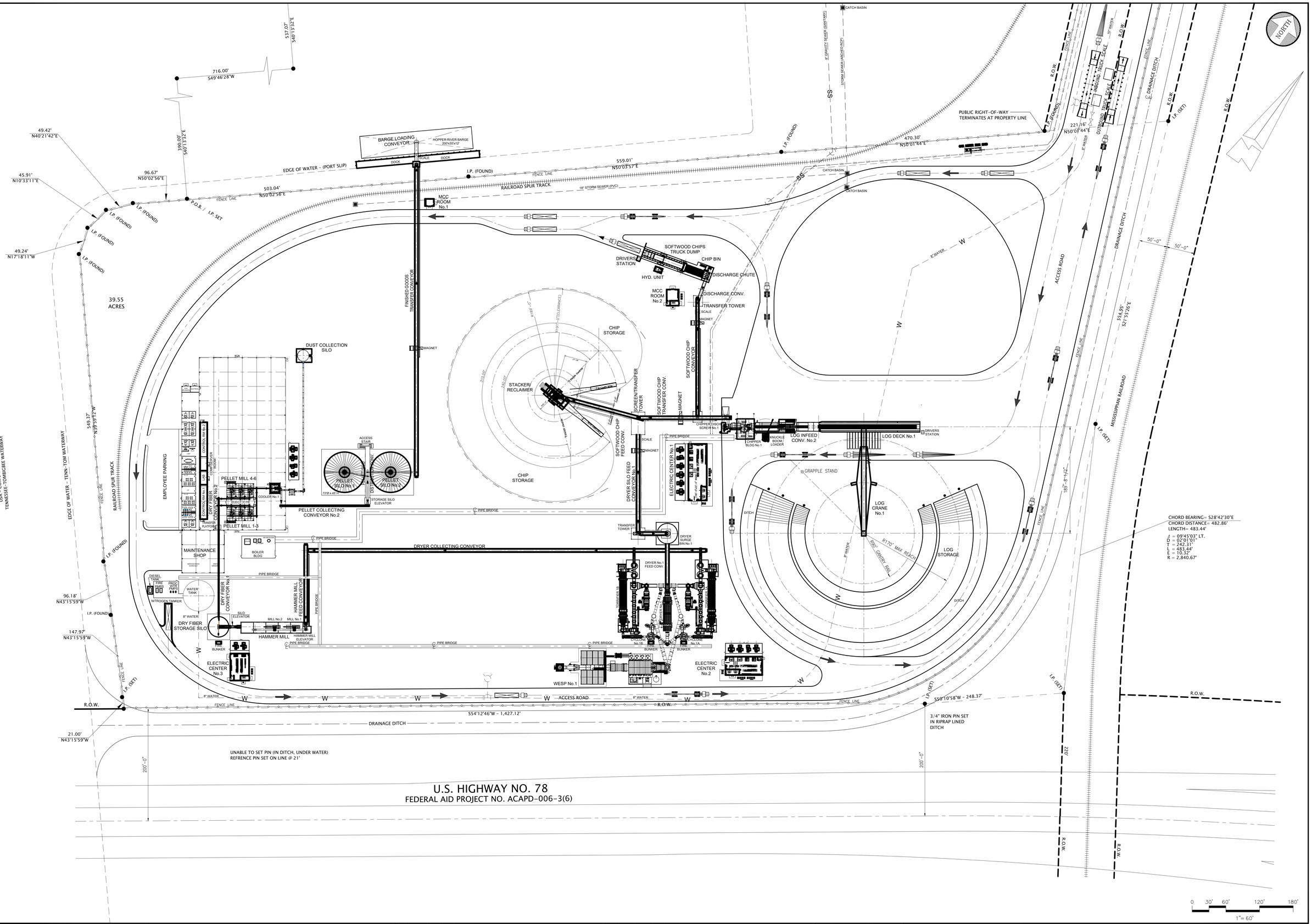
Northeast Mississippi Renewables, LLC - Fulton, Itawamba County, Mississippi



All Coordinates shown in UTM Coordinates, Zone 16, NAD 83 Datum

Trinity Consultants


Trucks
Wood Chips
Whole Logs Trucks
Storage
Chipping
Wood Chips
Chip Screen
Screened Chips
Green Chip Storage Pile
Screened Wood
Dryer
RTO
WESP
Oversized Chips
Heat
Heat
Dried Chips
Torrefication System No. 1
Torrefication System No. 2
Natural Gas
Synthetic Gas
Natural Gas
Synthetic Gas
Dust Collector
Torrefied Material Storage Silo
Torrefied Material
Torrefied Material
Dust Collector
Dust Collector
Dust Collector
Pellet Storage Silo 1
Dust Collector
Dust Collector
Dry Hammermill
Pellet Mills
Pellet Cooler
Finished Pellets
Finished Pellets
Barge Loadout
Steam
Pellet Storage Silo 2
Boiler
Natural Gas
Legend
Emissions
Process Material
Process Equipment
Northeast Mississippi Renewables, LLC
Fulton Facility
Figure B-2. Process Flow Diagram
Trinity Consultants
231101.0190
June 2025



REFERENCE DRAWINGS:
1.
2.
3.
4.
5.
6.
7.
8.
9.

REV.	DATE	BY	CHK'D	APP'D	REVISION DESCRIPTION

REV.	DATE	BY	CHK'D	APP'D	REVISION DESCRIPTION
P5	05/06/25	RHC			PRELIMINARY – NOT FOR CONSTRUCTION
P4	04/16/25	RHC			PRELIMINARY – NOT FOR CONSTRUCTION
P3	03/19/25	RHC			PRELIMINARY – NOT FOR CONSTRUCTION
P2	02/17/25	RHC			PRELIMINARY – NOT FOR CONSTRUCTION
P1	01/10/25	RHC			PRELIMINARY – NOT FOR CONSTRUCTION

SCALE: 1"=60'
DATE: 01/05/2025
DRAWN: RHC
CHECKED:
APPROVED:
PROJ. NO.: 17271
CAD FILENAME: 17271GA001

R-S-H ENGINEERING, INC.
MONROE, LA. TEL. (318)361-3000
WWW.RSH.COM FAX (318)387-4828
JOB NO: 17271 LIC. NO: E0793

CLIENT:
NORTHEAST MISSISSIPPI RENEWABLES
FULTON, MS

TITLE:
NORTHEAST MISSISSIPPI RENEWABLES
PELLET MILL
SITE PLAN FEL2

DRAWING NUMBER: 17271-GA-001
SHEET: 1 OF 1
REV.: P5

APPENDIX C. POTENTIAL EMISSIONS CALCULATIONS

Table C-1. Facility Wide Emissions - Potential Uncontrolled

Emission Sources	Emission Unit ID	Emissions (tpy)																																										
		CO	NO_x	Filterable PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	VOC	Lead	CO_2e	Acetaldehyde	Acrolein	Arsenic Compounds	Benzene	Beryllium Compounds	1,3-Butadiene	Cadmium	Carbon Tetrachloride	Chlorine	Chlorobenzene	Chloroform	Chromium Compounds	Cobalt Compounds	Ethylbenzene	Formaldehyde	Hydrogen Chloride	Hexane	Manganese	Mercury	Methanol	Naphthalene	Nickel Compounds	Phenol	Phosphorus	Propionaldehyde	Propylene	POM	PAC	Selenium Compounds	Styrene	Toluene	Vinyl Chloride	Xylene Isomers	Total HAP
Whole Logs and Green Residuals Processing	AA-100																																											
Truck Unloading	AA-101	--	--	1.07E-02	5.08E-03	7.69E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Whole Log Pile	AA-102	--	--	1.07E-02	5.08E-03	7.69E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chipper	AA-103	--	--	3.22E-02	1.52E-02	2.31E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Green Chips Storage Pile	AA-104	--	--	1.07E-02	5.08E-03	7.69E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Paved Roads Traffic	IA-001	--	--	7.79	1.56	1.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drying/Torrefication	AA-200																																											
Dryers[1]											9.09E+00	1.90E+00	--	--	--	--	--	--	--	--	--	--	--	1.16E+01	1.57E+00	--	--	--	9.09E+00	--	--	2.31E+00	--	1.07E+00	--	--	--	--	--	--	--	--	--	3.66E+01
Torrefication Systems[2]	AA-201 - AA-203	87.60	87.60	438.00	528.94	528.94	--	876.00	3.57E-02	87,465.2	6.18E-01	2.98E+00	1.64E-02	3.13E+00	8.19E-04	--	3.05E-03	3.35E-02	5.88E-01	2.46E-02	2.08E-02	1.56E-02	4.84E-03	2.31E-02	3.28E+00	0.00E+00	1.31E+00	1.19E+00	2.61E-03	--	7.22E-02	2.46E-02	3.80E-02	2.01E-02	--	--	1.85E-02	2.16E-03	2.08E-03	1.41E+00	6.85E-01	1.34E-02	1.86E-02	1.43E+01
RTO Burner[3]									1.87E-05		--	--	7.47E-06	7.85E-05	4.52E-07	--	4.11E-05	--	--	--	--	--	5.23E-05	3.14E-06	--	2.80E-03	--	6.72E-02	1.42E-05	9.71E-06	--	2.28E-05	7.85E-05	--	--	--	--	2.20E-06	1.09E-06	0.00E+00	--	1.27E-04	--	--	7.05E-02
System Bypass Stack	AA-204	25.01	12.74	25.00	30.19	30.19	--	28.31	--	4,992	5.19E-01	1.09E-01	--	--	--	--	--	--	--	--	--	--	--	--	6.61E-01	8.97E-02	--	--	--	5.19E-01	--	--	1.32E-01	--	6.13E-02	--	--	--	--	--	--	--	--	2.09E+00
Pellet Production Operations	AA-300																																											
Tornified Material Storage Silo	AA-301	--	--	75.09	75.09	75.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dry Hammermill	AA-302	--	--	446.0	446.0	446.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pellet Mills	AA-303	--	--	281.57	281.57	281.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pellet Cooler									--																																				
Dry Material Handling	AA-400																																											
Tornified Material Handling	AA-401	--	--	14.23	6.73	1.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pellets Storage and Loadout	AA-500																																											
Pellet Storage Silos No. 1 - 2	AA-501 - AA-502	--	--	75.09	75.09	75.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barge Loadout	AA-503	--	--	75.09	75.09	75.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Auxiliary Equipment	AA-600																																											
Boiler	AA-601	3.10	1.85	0.07	0.28	0.28	0.02	0.20	1.85E-05	4,433	--	--	7.39E-06	7.76E-05	4.47E-07	--	4.06E-05	--	--	--	--	5.17E-05	3.10E-06	--	2.77E-03	--	6.65E-02	1.40E-05	9.60E-06	--	2.25E-05	7.76E-05	--	--	--	--	2.18E-06	1.08E-06	8.86E-07	--	1.26E-04	--	--	6.97E-02
Diesel Fire Pump	AA-602	0.32	0.36	0.02	0.12	0.12	0.11	0.14	--	63.46	2.95E-04	3.56E-05	--	3.59E-04	--	1.51E-05	--	--	--	--	--	--	--	--	4.54E-04	--	--	--	--	--	3.26E-05	--	--	--	--	9.93E-04	3.07E-05	1.32E-06	--	--	1.57E-04	--	1.10E-04	2.48E-03
Facility-Wide Total With Positives		**116.03**	**102.55**	**1,438.01**	**1,520.69**	**1,514.95**	**0.13**	**904.65**	**0.04**	**96,954**	**10.23**	**4.99**	**0.02**	**3.13**	**8.20E-04**	**1.51E-05**	**3.13E-03**	**0.03**	**0.59**	**0.02**	**0.02**	**0.02**	**4.85E-03**	**0.02**	**15.52**	**1.66**	**1.45**	**1.19**	**2.63E-03**	**9.61**	**0.07**	**0.02**	**2.48**	**0.02**	**1.14**	**9.93E-04**	**1.85E-02**	**2.16E-03**	**2.09E-03**	**1.41**	**0.69**	**0.01**	**0.02**	**53.13**
Facility-Wide Total Without Positives[3]		**116.03**	**102.55**	**1,265.79**	**1,362.20**	**1,362.20**	**0.13**	**904.65**	**0.04**	**96,954**	**10.23**	**4.99**	**0.02**	**3.13**	**8.20E-04**	**1.51E-05**	**3.13E-03**	**0.03**	**0.59**	**0.02**	**0.02**	**0.02**	**4.85E-03**	**0.02**	**15.52**	**1.66**	**1.45**	**1.19**	**2.63E-03**	**9.61**	**0.07**	**0.02**	**2.48**	**0.02**	**1.14**	**9.93E-04**	**1.85E-02**	**2.16E-03**	**2.09E-03**	**1.41**	**0.69**	**0.01**	**0.02**	**53.13**
Title V Major Source Threshold (tpy)		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**N/A**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**25**
Above Threshold?[3]		**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**No**	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**Yes**
PSD Major Source Threshold (tpy)		**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Above Threshold?[3]		**No**	**No**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**No**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

1. Potential emissions of controlled pollutants from a manufacturer guarantee are combined for the dryer, torrefication burners, and RTO combustion, as guarantee is for total emissions exiting the RTO stack.
2. Fugitive emissions excluded from PSD major source threshold determination due to wood pellet manufacturing facility not being on the List of 28 (with lower major source threshold of 100 tpy).
3. Worse-case HAP emissions from natural gas and syngas combustion in the torrefication burners.

Table C-2. Facility Wide Emissions - Potential Controlled

Emission Sources	Emission Unit ID	Emissions (tpy)																						
		CO	NO_X	Filterable PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	VOC	Lead	CO_2e	Acetaldehyde	Acrolein	Arsenic Compounds	Benzene	Chlorine	Chromium Compounds	Formaldehyde	Hydrogen Chloride	Hexane	Manganese	Methanol	Nickel Compounds	Phenol	Propionaldehyde	Toluene	Total HAP
Whole Logs and Green Residuals Processing	AA-100																									
Truck Unloading	AA-101	--	--	1.07E-02	5.08E-03	7.69E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Whole Log Pile	AA-102	--	--	1.07E-02	5.08E-03	7.69E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chipper	AA-103	--	--	3.22E-02	1.52E-02	2.31E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Green Chips Storage Pile	AA-104	--	--	1.07E-02	5.08E-03	7.69E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Paved Roads Traffic	IA-001	--	--	7.79	1.56	1.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drying/Torrefication	AA-200																									
Dryers[1]									--		4.55E-01	9.51E-02	--	--	--	--	5.79E-01	4.71E-01	--	--	4.55E-01	--	1.16E-01	5.37E-02	--	2.22E+00
Torrefication Systems[1,3]	AA-201 - AA-203	87.60	87.60	43.80	52.89	52.89	--	43.80	3.57E-02	87,465.2	3.09E-02	1.49E-01	1.64E-02	1.56E-01	2.94E-02	1.56E-02	1.64E-01	4.24E+00	6.57E-02	1.19E+00	--	2.46E-02	0.00E+00	--	3.43E-02	6.12E+00
RTO Burner[1]									1.87E-05		--	--	7.47E-06	3.92E-06	--	5.23E-05	1.40E-04	--	3.36E-03	1.42E-05	--	7.85E-05	--	--	6.35E-06	3.74E-03
System Bypass Stack	AA-204	25.01	12.74	25.00	30.19	30.19	--	28.31	--	4,992	5.19E-01	1.09E-01	--	--	--	--	6.61E-01	8.97E-02	--	--	5.19E-01	--	1.32E-01	6.13E-02	--	2.09E+00
Pellet Production Operations	AA-300																									
Torrefied Material Storage Silo	AA-301	--	--	0.75	0.75	0.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dry Hammermill	AA-302	--	--	4.46	4.46	4.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pellet Mills	AA-303	--	--	2.82	2.82	2.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pellet Cooler									--																	
Dry Material Handling	AA-400																									
Torrefied Material Handling	AA-401	--	--	14.23	6.73	1.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pellets Storage and Loadout	AA-500																									
Pellet Storage Silos No. 1 - 2	AA-501 - AA-502	--	--	0.75	0.75	0.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barge Loadout	AA-503	--	--	0.75	0.75	0.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Auxiliary Equipment	AA-600																									
Boiler	AA-601	3.10	1.85	0.07	0.28	0.28	0.02	0.20	1.85E-05	4,433	--	--	7.39E-06	7.76E-05	--	5.17E-05	2.77E-03	--	6.65E-02	1.40E-05	--	7.76E-05	--	--	1.26E-04	6.97E-02
Diesel Fire Pump	AA-602	0.32	0.36	1.82E-02	0.12	0.12	0.11	0.14	--	63.46	2.95E-04	3.56E-05	--	3.59E-04	--	--	4.54E-04	--	--	--	--	--	--	--	1.57E-04	2.48E-03
Facility-Wide Total With Fugitives		**116.03**	**102.55**	**100.50**	**101.34**	**95.60**	**0.13**	**72.45**	**0.04**	**96,954**	**1.00**	**0.35**	**0.02**	**0.16**	**0.03**	**0.02**	**1.41**	**4.81**	**0.14**	**1.19**	**0.97**	**0.02**	**0.25**	**0.12**	**0.03**	**10.51**
Facility-Wide Total Without Fugitives[2]		**116.03**	**102.55**	**76.92**	**91.51**	**91.51**	**0.13**	**72.45**	**0.04**	**96,954**	**1.00**	**0.35**	**0.02**	**0.16**	**0.03**	**0.02**	**1.41**	**4.81**	**0.14**	**1.19**	**0.97**	**0.02**	**0.25**	**0.12**	**0.03**	**10.51**
Title V Major Source Threshold (tpy)		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**N/A**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**25**
Above Threshold?[2]		**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
PSD Major Source Threshold (tpy)		**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Above Threshold?[2]		**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

1. Potential emissions of controlled pollutants from a manufacturer guarantee are combined for the dryer, torrefication burners, and RTO combustion, as guarantee is for total emissions exiting the RTO stack.
2. Fugitive emissions excluded from PSD major source threshold determination due to wood pellet manufacturing facility not being on the List of 28 (with lower major source threshold of 100 tpy).
3. Worse-case HAP emissions from natural gas and syngas combustion in the torrefication burners.

Table C-3. Whole Log Receiving, Processing, and Storage Operating Parameters

Emission Source	Number of Drop Points	Annual Throughput (tpy)[1]
Truck Unloading[2]	1	551,155
Whole Log Pile	1	551,155
Chipper	3	551,155
Green Chips Storage Pile	1	551,155

1. Annual throughput based on amount of dried material needed to generate final amount of finished pellets.
2. Truck unloading is primarily logs; however, could be up to 30% in chips.

Table C-4. Raw Material Handling Emission Factors

Pollutant	Emission Factor[1] (lb/ton)
Filterable PM	3.90E-05
Filterable PM_{10}	1.84E-05
Filterable $PM_{2.5}$	2.79E-06

1. PM emission factor for receiving and storage calculated using continuous drop point equation from AP-42, Section 13.2.4 Aggregate Handling and Storage Piles (11/06).

PM Emission Factor (lb/ton) $= [k * (0.0032) * (U/5)^{1.3}] / (M/2)^{1.4}$

k - PM	0.74	Particle size multiplier for PM_{30} per AP-42, Section 13.2.4-4 (11/06).
k - PM_{10}	0.35	Particle size multiplier for PM_{10} per AP-42, Section 13.2.4-4 (11/06).
k - $PM_{2.5}$	0.053	Particle size multiplier for $PM_{2.5}$ per AP-42, Section 13.2.4.3.
M (%)	50	Moisture content indicated on moisture balance.
U	6.8	Based on historical data from Weather Sparks in Fulton, MS.

Table C-5. Potential Emissions from Raw Material Handling

Emission Source	Potential Emissions[1]					
	Filterable PM		Filterable PM_{10}		Filterable $PM_{2.5}$	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Truck Unloading	2.45E-03	1.07E-02	1.16E-03	5.08E-03	1.76E-04	7.69E-04
Whole Log Pile	2.45E-03	1.07E-02	1.16E-03	5.08E-03	1.76E-04	7.69E-04
Chipper	7.36E-03	3.22E-02	3.48E-03	1.52E-02	5.27E-04	2.31E-03
Green Chips Storage Pile	2.45E-03	1.07E-02	1.16E-03	5.08E-03	1.76E-04	7.69E-04

1. Potential Emissions are calculated as follows:
Potential Emissions (tpy) = Emission Factor (lb/ton) * Annual Throughput (tpy) / 2,000 (lb/ton)
Potential Emissions (lb/hr) = Emission Factor (lb/ton) * Annual Throughput (tpy) / Annual Operation (hr/yr)
Annual operation assumes 8,760 hr/yr of operation

Table C-6. Wood Drying Process Operating Parameters

Parameter[1]	Value	Units
Total Heat Input[2]	170	MMBtu/hr
Potential Operation	8,760	hr/yr
Dried Chips Throughput	165,347	ODT/yr

1. Annual throughput calculated based on throughput of pellets produced per year.
2. Two (2) torrefication burners, each 85 MMBtu/hr heat input capacity.

Table C-7. Wood Drying Process Criteria Pollutant Emissions

Pollutant	Wood Drying Emission Factor[1] (lb/ODT)	Uncontrolled Potential Emissions[2] (lb/hr)	(tpy)	WESP Control Efficiency (%)	RTO Control Efficiency (%)	Controlled Potential Emissions[3] (lb/hr)	(tpy)
CO[3]	1.06	20.0	87.6	-	-	20.0	87.6
NO_X[3]	1.06	20.0	87.6	-	-	20.0	87.6
Filterable PM[3]	5.30	100.0	438.0	90%	-	10.0	43.8
Condensable PM	1.10	20.8	90.9	90%	-	2.08	9.09
Total PM_{10}[4]	6.40	120.8	528.9	90%	-	12.1	52.9
Total $PM_{2.5}$[4]	6.40	120.8	528.9	90%	-	12.1	52.9
SO_2	-	0.0	0.0	-	-	0.0	0.0
VOC[3]	10.60	200.0	876.0	-	95%	10.0	43.8

1. Calculated from known control equipment efficiency and emission guarantees from vendor. Except for Condensable PM which is from Georgia EPD Recommended Emission Factors for Wood Pellet Manufacturing Emission Factors - rotary dryer direct wood fired processing green softwood (January 2013). The Condensable PM is a conservative emission factor as the dryer will be natural gas fired and not wood fired.
2. Potential emissions are calculated as follows:
Potential Emissions (tpy) = [Wood Drying EF (lb/ODT) * Dryer Capacity (ODT/yr)] * [100% - Control efficiency (%)]
Potential Emissions (lb/hr) = Potential Emissions (tpy) / Annual Operation (hr/yr) * 2,000 (lb/ton)
3. Potential Emissions for these pollutants are based on Vendor Guarantees for the Dryer/RTO system.
4. Emission factors for Total PM_{10} and Total $PM_{2.5}$ are the sum of the filterable and condensable components. It is conservatively assumed that filterable PM = filterable PM_{10} = filterable $PM_{2.5}$.

Table C-8. Wood Drying Process Potential GHG Emissions

Pollutant	Uncontrolled Emission Factor[1] (lb/MMBtu)	Potential Emissions[2] (lb/hr)	(tpy)
CH_4	7.06E-03	1.20	5.25
N_2O	9.26E-03	1.57	6.90
CO_2	114.81	19,518.4	85,490.8
CO_2e[3]	117.47	19,969.2	87,465.2

1. Emission factors for CO_2, N_2O, and CH_4 from 40 CFR Part 98, Subpart C, Table C-1 amended December 9, 2016 and Table C-2 amended May 14, 2024.
2. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)]
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)
3. CO_2e is calculated using Global Warming Potentials (GWPs) from 40 CFR Part 98, Subpart A, Table A-1 effective January 1, 2025.
GWPs used for CO_2, CH_4, and N_2O are listed below.

CO_2	1
CH_4	28
N_2O	265

Table C-9. Dryers Potential HAP Emissions

Pollutant	Wood Drying Emission Factor (lb/ODT)	Uncontrolled Potential Emissions[1] (lb/hr)	(tpy)	Control Efficiency[2] (%)	Post-Control Potential Emissions[3] (lb/hr)	(tpy)
Acetaldehyde[4]	1.10E-01	2.08E+00	9.09E+00	95%	1.04E-01	4.55E-01
Acrolein[5]	2.30E-02	4.34E-01	1.90E+00	95%	2.17E-02	9.51E-02
Formaldehyde[4]	1.40E-01	2.64E+00	1.16E+01	95%	1.32E-01	5.79E-01
HCl[4]	1.90E-02	3.59E-01	1.57E+00	70%	1.08E-01	4.71E-01
Methanol[4]	1.10E-01	2.08E+00	9.09E+00	95%	1.04E-01	4.55E-01
Phenol[5]	2.80E-02	5.29E-01	2.31E+00	95%	2.64E-02	1.16E-01
Propionaldehyde[5]	1.30E-02	2.45E-01	1.07E+00	95%	1.23E-02	5.37E-02
	Total HAP	**8.36**	**36.62**		**0.51**	**2.22**

1. Uncontrolled Potential emissions are calculated as follows:
Potential Emissions (tpy) = [Wood Drying EF (lb/ODT) * Dryer Capacity (ODT/yr)]
Potential Emissions (lb/hr) = Potential Emissions (tpy) / Annual Operation (hr/yr) * 2,000 (lb/ton)
2. Organic HAP emissions are controlled by an RTO, thus a 95% control efficiency has been applied to all organic HAP. A 70% removal efficiency is used for HCl as a WESP is used for PM control based on recommendations from GA EPD for a direct wood fired dryer processing green softwood at a Wood Pellet Manufacturing facility.
3. Post-Control Potential emissions are calculated as follows:
Potential Emissions (tpy) = [Wood Drying EF (lb/ODT) * Dryer Capacity (ODT/yr)] * [100% - Control efficiency (%)]
Potential Emissions (lb/hr) = Potential Emissions (tpy) / Annual Operation (hr/yr) * 2,000 (lb/ton)
4. Emission factors pursuant to recommended uncontrolled emission factors from GA EPD for a direct wood fired dryer processing green softwood at a Wood Pellet Manufacturing facility.
5. Emission factors for wood drying are uncontrolled and from AP-42 Section 10.6.2 (Particleboard Manufacturing) Table 10.6.2-3, Rotary dryer, green, direct wood-fired, softwood (06/02).

Table C-10. Drying and Torrefication System Bypass Stack Operating Parameters

Parameter[1]	Value	Units
Unit Heat Input	170	MMBtu/hr
Potential Operation	8,760	hr/yr
Bypass Stack Operating Hours	500	hr/yr
Annual Throughput	165,347	ODT/yr
Hourly Throughput	19	ODT/hr

1. Annual throughput calculated based on throughput of pellets produced per year.

Table C-11. Drying and Torrefication System Bypass Stack Criteria Pollutant Emissions

Pollutant	Wood Drying Emission Factor[1] (lb/ODT)	Potential Emissions (lb/hr)	Potential Emissions (tpy)
CO	5.30	100.0	25.01
NO_X	2.70	51.0	12.74
Filterable PM[3]	5.30	100.0	25.00
Condensable PM	1.10	20.8	5.19
Total PM_{10}[3,4]	6.40	120.8	30.19
Total $PM_{2.5}$[3,4]	6.40	120.8	30.19
SO_2	-	0.0	0.00
VOC[3]	6.00	113.3	28.31

1. Georgia EPD Recommended Emission Factors for Wood Pellet Manufacturing Emission Factors - rotary dryer direct wood fired processing green softwood (January 2013). Conservative emission factors as dryers will be natural gas fired and not wood fired. Emissions are uncontrolled as utilizing bypass stacks.
2. Potential emissions are calculated as follows:
Potential Emissions (tpy) = [Wood Drying EF (lb/ODT) * Dryer Capacity (ODT/yr)]
Potential Emissions (lb/hr) = Potential Emissions (tpy) / Annual Operation (hr/yr) * 2,000 (lb/ton)
3. Emission factors obtained from Vendor Guarantees for the Dryer/RTO system for filterable PM.
4. Emission factors for Total PM_{10} and Total $PM_{2.5}$ are the sum of the filterable and condensable components. It is conservatively assumed that filterable PM = filterable PM_{10} = filterable $PM_{2.5}$.

Table C-12. Drying and Torrefication System Bypass Stack Potential GHG Emissions

Pollutant	Uncontrolled Emission Factor[1] (lb/MMBtu)	Potential Emissions[2] (lb/hr)	Potential Emissions[2] (tpy)
CH_4	7.06E-03	1.20	0.30
N_2O	9.26E-03	1.57	0.39
CO_2	114.8	19,518.4	4,879.6
CO_2e[3]	117.5	19,969.2	4,992.3

1. Emission factors for CO2, N2O, and CH4 from 40 CFR Part 98, Subpart C, Table C-1 amended December 9, 2016 and Table C-2 amended May 14, 2024.
2. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)]
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)
3. CO_2e is calculated using Global Warming Potentials (GWPs) from 40 CFR Part 98, Subpart A, Table A-1 updated January 1, 2025. GWPs used for CO_2, CH_4, and N_2O are listed below.

CO_2	1
CH_4	28
N_2O	265

Table C-13. Drying and Torrefication System Bypass Stack Potential HAP Emissions

Pollutant	Wood Drying Emission Factor (lb/ODT)	Potential Emissions[1] (lb/hr)	Potential Emissions[1] (tpy)
Acetaldehyde[3]	1.10E-01	2.08E+00	5.19E-01
Acrolein[4]	2.30E-02	4.34E-01	1.09E-01
Formaldehyde[3]	1.40E-01	2.64E+00	6.61E-01
HCl[3]	1.90E-02	3.59E-01	8.97E-02
Methanol[3]	1.10E-01	2.08E+00	5.19E-01
Phenol[4]	2.80E-02	5.29E-01	1.32E-01
Propionaldehyde[4]	1.30E-02	2.45E-01	6.13E-02
	Total HAP	**8.36**	**2.09**

1. Uncontrolled Potential emissions are calculated as follows:
Potential Emissions (tpy) = [Wood Drying EF (lb/ODT) * Dryer Capacity (ODT/yr)]
Potential Emissions (lb/hr) = Potential Emissions (tpy) / Annual Operation (hr/yr) * 2,000 (lb/ton)
2. Emission factors for wood drying are uncontrolled and from AP-42 Section 10.6.2 (Particleboard Manufacturing) Table 10.6.2-3, Rotary dryer, green, direct wood-fired, softwood (06/02).
3. Emission factors pursuant to recommended uncontrolled emission factors from Georgia EPD for a direct wood fired dryer processing green softwood at a Wood Pellet Manufacturing facility.
4. Emission factors for wood drying are uncontrolled and from AP-42 Section 10.6.2 (Particleboard Manufacturing) Table 10.6.2-3, Rotary dryer, green, direct wood-fired, softwood (06/02).

Table C-14. Torrefication Burners (Natural Gas) Operating Parameters

Parameter	Value	Units
Unit Heat Input	170	MMBtu/hr
Potential Operation	8,760	hr/yr
Natural Gas Heating Value	1,020	Btu/scf
Natural Gas Combustion Limit	1,460	MMscf/yr

Table C-15. Torrefication Burners - Potential HAP Emissions (Natural Gas)

Pollutant	Uncontrolled Emission Factor[1] (lb/MMscf)	Uncontrolled Potential Emissions[2] (lb/hr)	(tpy)	Control Efficiency[3]	Controlled Potential Emissions[4] (lb/hr)	(tpy)
Arsenic Compounds	2.00E-04	3.33E-05	1.46E-04	--	3.33E-05	1.46E-04
Benzene	2.10E-03	3.50E-04	1.53E-03	95%	1.75E-05	7.67E-05
Beryllium Compounds	1.21E-05	2.02E-06	8.83E-06	--	2.02E-06	8.83E-06
Cadmium	1.10E-03	1.83E-04	8.03E-04	--	1.83E-04	8.03E-04
Chromium Compounds	1.40E-03	2.33E-04	1.02E-03	--	2.33E-04	1.02E-03
Cobalt Compounds(CoC)	8.40E-05	1.40E-05	6.13E-05	--	1.40E-05	6.13E-05
Formaldehyde	7.50E-02	1.25E-02	5.48E-02	95%	6.25E-04	2.74E-03
Hexane	1.80E+00	3.00E-01	1.31E+00	95%	1.50E-02	6.57E-02
Lead	5.00E-04	8.33E-05	3.65E-04	--	8.33E-05	3.65E-04
Manganese	3.80E-04	6.33E-05	2.77E-04	--	6.33E-05	2.77E-04
Mercury	2.60E-04	4.33E-05	1.90E-04	--	4.33E-05	1.90E-04
Naphthalene	6.10E-04	1.02E-04	4.45E-04	95%	5.08E-06	2.23E-05
Nickel Compounds	2.10E-03	3.50E-04	1.53E-03	--	3.50E-04	1.53E-03
Selenium Compounds	2.40E-05			--	4.00E-06	1.75E-05
Toluene(Methylbenzene)	3.40E-03	5.67E-04	2.48E-03	95%	2.83E-05	1.24E-04
*Polycyclic Organic Matter (POM) * Polycyclic Aromatic Compounds*						
2-Methylnaphthalene*	2.40E-05	4.00E-06	1.75E-05	95%	2.00E-07	8.76E-07
3-Methylchloranthrene**	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
7,12-Dimethylbenzo(a)anthracene**	1.60E-05	2.67E-06	1.17E-05	95%	1.33E-07	5.84E-07
Acenaphthene*	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Acenaphthylene*	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Anthracene*	2.40E-06	4.00E-07	1.75E-06	95%	2.00E-08	8.76E-08
Benzo(a)anthracene**	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Benzo(a)pyrene**	1.20E-06	2.00E-07	8.76E-07	95%	1.00E-08	4.38E-08
Benzo(b)fluoranthene**	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Benzo(k)fluoranthene)**	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Benzo(g,h,i)perylene*	1.20E-06	2.00E-07	8.76E-07	95%	1.00E-08	4.38E-08
Chrysene(Benzo(a)phenanthrene)**	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Dibenzo(a,h)anthracene**	1.20E-06	2.00E-07	8.76E-07	95%	1.00E-08	4.38E-08
Fluoranthene*	3.00E-06	5.00E-07	2.19E-06	95%	2.50E-08	1.10E-07
Fluorene*	2.80E-06	4.67E-07	2.04E-06	95%	2.33E-08	1.02E-07
Indeno(1,2,3-cd)pyrene**	1.80E-06	3.00E-07	1.31E-06	95%	1.50E-08	6.57E-08
Phenanathrene*	1.70E-05	2.83E-06	1.24E-05	95%	1.42E-07	6.21E-07
Pyrene*	5.00E-06	8.33E-07	3.65E-06	95%	4.17E-08	1.83E-07
		Total HAP	**1.38**		**Total HAP**	**0.07**

1. Uncontrolled emission factors for natural gas combustion from AP-42, Section 1.4 - Natural Gas Combustion, Table 1.4-1,3 (9/03).
2. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)]
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)
3. VOC and Organic HAP emissions are controlled by an RTO, thus a 95% control efficiency has been applied to VOC and all organic HAP.
4. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)] * (1 - Control efficiency (%))
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)

Table C-16. Torrefication Burners (Syngas) Operating Parameters

Parameter[1]	Value	Units
Unit Heat Input	170.00	MMBtu/hr
Potential Operation	8,760	hr/yr
Syngas Combustion	1,489,200	MMBtu/yr

1. Operating parameters provided by ESI.

Table C-17. Torrefication Burners - Potential HAP Emissions (Syngas)

Pollutant	Uncontrolled Emission Factor[1] (lb/MMBtu)	Uncontrolled Potential Emissions[2] (lb/hr)	(tpy)	Control Efficiency[3]	Controlled Potential Emissions[4] (lb/hr)	(tpy)
Acetaldehyde	8.30E-04	1.41E-01	6.18E-01	95%	7.06E-03	3.09E-02
Acrolein	4.00E-03	6.80E-01	2.98E+00	95%	3.40E-02	1.49E-01
Arsenic Compounds	2.20E-05	3.74E-03	1.64E-02	--	3.74E-03	1.64E-02
Benzene	4.20E-03	7.14E-01	3.13E+00	95%	3.57E-02	1.56E-01
Beryllium Compounds	1.10E-06	1.87E-04	8.19E-04	--	1.87E-04	8.19E-04
Cadmium	4.10E-06	6.97E-04	3.05E-03	--	6.97E-04	3.05E-03
Carbon tetrachloride	4.50E-05	7.65E-03	3.35E-02	95%	3.83E-04	1.68E-03
Chlorine	7.90E-04	1.34E-01	5.88E-01	95%	6.72E-03	2.94E-02
Chlorobenzene	3.30E-05	5.61E-03	2.46E-02	95%	2.81E-04	1.23E-03
Chloroform	2.80E-05	4.76E-03	2.08E-02	95%	2.38E-04	1.04E-03
Chromium Compounds	2.10E-05	3.57E-03	1.56E-02	--	3.57E-03	1.56E-02
Cobalt Compounds(CoC)	6.50E-06	1.11E-03	4.84E-03	--	1.11E-03	4.84E-03
Ethylbenzene	3.10E-05	5.27E-03	2.31E-02	95%	2.64E-04	1.15E-03
Formaldehyde	4.40E-03	7.48E-01	3.28E+00	95%	3.74E-02	1.64E-01
Hydrogen Chloride	1.90E-02			70%	9.69E-01	4.24E+00
Lead	4.80E-05	8.16E-03	3.57E-02	--	8.16E-03	3.57E-02
Manganese	1.60E-03	2.72E-01	1.19E+00	--	2.72E-01	1.19E+00
Mercury	3.50E-06	5.95E-04	2.61E-03	--	5.95E-04	2.61E-03
Naphthalene	9.70E-05	1.65E-02	7.22E-02	95%	8.25E-04	3.61E-03
Nickel Compounds	3.30E-05	5.61E-03	2.46E-02	--	5.61E-03	2.46E-02
Phenol	5.10E-05	8.67E-03	3.80E-02	95%		0.00E+00
Phosphorus	2.70E-05	4.59E-03	2.01E-02	95%		0.00E+00
Selenium Compounds	2.80E-06	4.76E-04	2.08E-03	--	4.76E-04	2.08E-03
Styrene	1.90E-03	3.23E-01	1.41E+00	95%		0.00E+00
Toluene(Methylbenzene)	9.20E-04	1.56E-01	6.85E-01	95%	7.82E-03	3.43E-02
Vinyl Chloride	1.80E-05	3.06E-03	1.34E-02	95%	1.53E-04	6.70E-04
o-Xylene	2.50E-05	4.25E-03	1.86E-02	95%	2.13E-04	9.31E-04
*Polycyclic Organic Matter (POM) * Polycyclic Aromatic Compounds (PAC)***						
2-Methylnaphthalene*	1.60E-07	2.72E-05	1.19E-04	95%	1.36E-06	5.96E-06
Acenaphthene*	9.10E-07	1.55E-04	6.78E-04	95%	7.74E-06	3.39E-05
Acenaphthylene*	5.00E-06	8.50E-04	3.72E-03	95%	4.25E-05	1.86E-04
Anthracene*	3.00E-06	5.10E-04	2.23E-03	95%	2.55E-05	1.12E-04
Benzo(a)anthracene**	6.50E-08	1.11E-05	4.84E-05	95%	5.53E-07	2.42E-06
Benzo(a)pyrene**	2.60E-06	4.42E-04	1.94E-03	95%	2.21E-05	9.68E-05
Benzo(b)fluoranthene**	1.00E-07	1.70E-05	7.45E-05	95%	8.50E-07	3.72E-06
Benzo(k)fluoranthene)**	3.60E-08	6.12E-06	2.68E-05	95%	3.06E-07	1.34E-06
Benzo(g,h,i)perylene*	9.30E-08	1.58E-05	6.92E-05	95%	7.91E-07	3.46E-06
Dibenzo(a,h)anthracene**	9.10E-09	1.55E-06	6.78E-06	95%	7.74E-08	3.39E-07
Fluoranthene*	1.60E-06	2.72E-04	1.19E-03	95%	1.36E-05	5.96E-05
Fluorene*	3.40E-06	5.78E-04	2.53E-03	95%	2.89E-05	1.27E-04
Indeno(1,2,3-cd)pyrene**	8.70E-08	1.48E-05	6.48E-05	95%	7.40E-07	3.24E-06
Phenanathrene*	7.00E-06	1.19E-03	5.21E-03	95%	5.95E-05	2.61E-04
Pyrene*	3.70E-06	6.29E-04	2.76E-03	95%	3.15E-05	1.38E-04
		Total HAP	**14.27**		**Total HAP**	**6.12**

1. Uncontrolled emission factors for wood residue combustion from AP-42, Section 1.6 - Wood Residue Combustion in Boilers, Table 1.6-1,2,3 (4/22).
2. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)]
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)
3. VOC and Organic HAP emissions are controlled by an RTO, thus a 95% control efficiency has been applied to VOC and all organic HAP.
4. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)] * (1 - Control efficiency (%))
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)

Table C-18. RTO Burners Operating Parameters

Parameter[1]	Value	Units
Unit Heat Input	8.70	MMBtu/hr
Potential Operation	8,760	hr/yr
Natural Gas Heating Value	1,020	Btu/scf
Natural Gas Combustion Limit	75	MMscf/yr

1. Operating parameters including total heat input capacity for all three unit RTO burners.

Table C-19. RTO Burners - Potential HAP Emissions

Pollutant	Uncontrolled Emission Factor[1] (lb/MMscf)	Uncontrolled Potential Emissions[2] (lb/hr)	(tpy)	Control Efficiency[3]	Controlled Potential Emissions[4] (lb/hr)	(tpy)
Arsenic Compounds	2.00E-04	1.71E-06	7.47E-06	--	1.71E-06	7.47E-06
Benzene	2.10E-03	1.79E-05	7.85E-05	95%	8.96E-07	3.92E-06
Beryllium Compounds	1.21E-05	1.03E-07	4.52E-07	--	1.03E-07	4.52E-07
Cadmium	1.10E-03	9.38E-06	4.11E-05	--	9.38E-06	4.11E-05
Chromium Compounds	1.40E-03	1.19E-05	5.23E-05	--	1.19E-05	5.23E-05
Cobalt Compounds(CoC)	8.40E-05	7.16E-07	3.14E-06	--	7.16E-07	3.14E-06
Formaldehyde	7.50E-02	6.40E-04	2.80E-03	95%	3.20E-05	1.40E-04
Hexane	1.80E+00	1.54E-02	6.72E-02	95%	7.68E-04	3.36E-03
Lead	5.00E-04	4.26E-06	1.87E-05	--	4.26E-06	1.87E-05
Manganese	3.80E-04	3.24E-06	1.42E-05	--	3.24E-06	1.42E-05
Mercury	2.60E-04	2.22E-06	9.71E-06	--	2.22E-06	9.71E-06
Naphthalene	6.10E-04	5.20E-06	2.28E-05	95%	2.60E-07	1.14E-06
Nickel Compounds	2.10E-03	1.79E-05	7.85E-05	--	1.79E-05	7.85E-05
Selenium Compounds	2.40E-05			--	2.05E-07	8.97E-07
Toluene(Methylbenzene)	3.40E-03	2.90E-05	1.27E-04	95%	1.45E-06	6.35E-06
*Polycyclic Aromatic Compounds (PAC)***						
2-Methylnaphthalene*	2.40E-05	2.05E-07	8.97E-07	95%	1.02E-08	4.48E-08
3-Methylchloranthrene**	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
7,12-Dimethylbenzo(a)anthracene**	1.60E-05	1.36E-07	5.98E-07	95%	6.82E-09	2.99E-08
Acenaphthene*	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Acenaphthylene*	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Anthracene*	2.40E-06	2.05E-08	8.97E-08	95%	1.02E-09	4.48E-09
Benzo(a)anthracene**	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Benzo(a)pyrene**	1.20E-06	1.02E-08	4.48E-08	95%	5.12E-10	2.24E-09
Benzo(b)fluoranthene**	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Benzo(k)fluoranthene)**	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Benzo(g,h,i)perylene*	1.20E-06	1.02E-08	4.48E-08	95%	5.12E-10	2.24E-09
Chrysene(Benzo(a)phenanthrene)**	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Dibenzo(a,h)anthracene**	1.20E-06	1.02E-08	4.48E-08	95%	5.12E-10	2.24E-09
Fluoranthene*	3.00E-06	2.56E-08	1.12E-07	95%	1.28E-09	5.60E-09
Fluorene*	2.80E-06	2.39E-08	1.05E-07	95%	1.19E-09	5.23E-09
Indeno(1,2,3-cd)pyrene**	1.80E-06	1.54E-08	6.72E-08	95%	7.68E-10	3.36E-09
Phenanathrene*	1.70E-05	1.45E-07	6.35E-07	95%	7.25E-09	3.18E-08
Pyrene*	5.00E-06	4.26E-08	1.87E-07	95%	2.13E-09	9.34E-09
		Total HAP	**0.07**		**Total HAP**	**3.74E-03**

1. Uncontrolled emission factors for natural gas combustion from AP-42, Section 1.4 - Natural Gas Combustion, Table 1.4-1,3 (9/03).
2. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)]
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)
3. The RTO is assumed to control VOC and Organic HAP with 95% efficiency.
4. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)] * (1 - Control efficiency (%))
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)

Table C-20. Torrefied Material Handling Operating Parameters

Emission Source	Number of Drop Points[2]	Annual Throughput (tpy)[1]
Torrefied Material Handling	7	165,347

1. Throughput based on amount of finished pellets.
2. The number of drop points was counted from leaving the torrefiers to loading pellets.

Table C-21. Torrefied Material Handling Emission Factors

Pollutant	Emission Factor[1] (lb/ton)
Filterable PM	2.46E-02
Filterable PM_{10}	1.16E-02
Filterable $PM_{2.5}$	1.76E-03

1. PM emission factor for receiving and storage calculated using continuous drop point equation from AP-42, Section 13.2.4 Aggregate Handling and Storage Piles (11/06).

PM Emission Factor (lb/ton) $= [k * (0.0032) * (U/5)^{1.3}] / (M/2)^{1.4}$

k - PM	0.74	Particle size multiplier for PM_{30} per AP-42, Section 13.2.4-4 (11/06).
k - PM_{10}	0.35	Particle size multiplier for PM_{10} per AP-42, Section 13.2.4-4 (11/06).
k - $PM_{2.5}$	0.053	Particle size multiplier for $PM_{2.5}$ per AP-42, Section 13.2.4.3.
M (%)	0.5	Moisture content indicated on moisture balance.
U	6.8	Based on historical data from Weather Sparks in Fulton, MS.

Table C-22. Torrefied Material Handling Potential PM Emissions

Emission Source	Potential Emissions[1]					
	Filterable PM		Filterable PM_{10}		Filterable $PM_{2.5}$	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Torrefied Material Handling	3.25	14.23	1.54	6.73	0.23	1.02

1. Potential Emissions are calculated as follows:
Potential Emissions (tpy) = Emission Factor (lb/ton) * Annual Throughput (tpy) / 2,000 (lb/ton)
Potential Emissions (lb/hr) = Emission Factor (lb/ton) * Annual Throughput (tpy) / Annual Operation (hr/yr)
Annual operation assumes 8,760 hr/yr of operation

Table C-23. Pelletizing Operating Parameters

Emission Source	Annual Throughput[1]	Units
Total Capacity		
Dry Hammermill	260,718	tpy
Pellet Mills	165,347	tpy
Pellet Cooler	165,347	tpy
Volumetric Capacity		
Pellet Density[2]	40	lb/ft^3
Pellet Mills[3]	8,267,325	ft^3/yr
Pellet Cooler[3]	8,267,325	ft^3/yr

1. Annual throughput based on finished pellet production capacity.
2. Pellet density provided by ESI.
3. Potential volume throughput estimated as follows: Potential Mass Throughput (tons/year) * 2,000 (lb/ton) / Pellet Density (lb/ft^3)

Table C-24. Pelletizing Dust Collectors Operating Parameters and Potential PM Emissions

Emission Source	Control Device	Flow Rate (dscfm)[1]	Loading Rate (gr/dscf)[1]	Uncontrolled Potential Emissions[2] Filterable $PM/PM_{10}/PM_{2.5}$ (lb/hr)	(tpy)	Control Efficiency (%)	Controlled Potential Emissions[3] Filterable $PM/PM_{10}/PM_{2.5}$ (lb/hr)	(tpy)
Torrefied Material Storage Silo	Dust Collector	2,000	0.01	17.14	75.09	99%	0.17	0.75
Dry Hammermill	Dust Collector	11,880	0.01	101.83	446.01	99%	1.02	4.46
Pellet Mills and Cooler	Dust Collector	7,500	0.01	64.29	281.57	99%	0.64	2.82

1. Flowrate and Loading rate provided by ESI.
2. Uncontrolled potential emissions are calculated as follows:
   Potential Emissions (lb/hr) = Flowrate (dscfm) * 60 (min/hr) * Pollutant Loading (gr/dscf) / 7,000 (gr/lb) / (1 - Control Efficiency)
   Potential Emissions (tpy) = Potential Emissions (lb/hr) * Annual Operation (hr/yr) / 2,000 (lb/ton) / (1 - Control Efficiency)
   Where annual emissions assume 8,760 hours of operation per year for conservatism.
3. Controlled potential emissions are calculated as follows:
   Potential Emissions (lb/hr) = Flowrate (dscfm) * 60 (min/hr) * Pollutant Loading (gr/dscf) / 7,000 (gr/lb)
   Potential Emissions (tpy) = Potential Emissions (lb/hr) * Annual Operation (hr/yr) / 2,000 (lb/ton)
   Where annual emissions assume 8,760 hours of operation per year for conservatism.

Table C-25. Pellet Storage and Loadout Operating Parameters

Emission Source	Annual Throughput (tpy)[1]
Pellet Storage (2 Silos)	165,347
Barge Loadout	165,347

1. Throughput based on production of finished pellets.

Table C-26. Pellet Storage and Loadout Dust Collectors Operating Parameters and Potential PM Emissions

Emission Source	Control Device[4]	Flow Rate (dscfm)[1]	Loading Rate (gr/dscf)[1]	Uncontrolled Potential Emissions[2] Filterable PM/PM_{10}/$PM_{2.5}$ (lb/hr)	(tpy)	Control Efficiency (%)	Controlled Potential Emissions[3] Filterable PM/PM_{10}/$PM_{2.5}$ (lb/hr)	(tpy)
Pellet Storage Silos No. 1 - 2	Dust Collectors	2,000	0.01	17.14	75.09	99%	0.17	0.75
Barge Loadout	Dust Collector	2,000	0.01	17.14	75.09	99%	0.17	0.75

1. Flowrate and loading rate provided by ESI.
2. Uncontrolled potential emissions are calculated as follows:
   Potential Emissions (lb/hr) = Flowrate (dscfm) * 60 (min/hr) * Pollutant Loading (gr/dscf) / 7,000 (gr/lb) / (1 - Control Efficiency)
   Potential Emissions (tpy) = Potential Emissions (lb/hr) * Annual Operation (hr/yr) / 2,000 (lb/ton) / (1 - Control Efficiency)
   Where annual emissions assume 8,760 hours of operation per year for conservatism.
3. Controlled potential emissions are calculated as follows:
   Potential Emissions (lb/hr) = Flowrate (dscfm) * 60 (min/hr) * Pollutant Loading (gr/dscf) / 7,000 (gr/lb)
   Potential Emissions (tpy) = Potential Emissions (lb/hr) * Annual Operation (hr/yr) / 2,000 (lb/ton)
   Where annual emissions assume 8,760 hours of operation per year for conservatism.
4. Two (2) dust collectors (1,000 DSCFM exhaust flow rate each), with total PM emissions combined for pellet storage silos.

Table C-27. Boiler Operating Parameters

Parameter	Value	Units
Unit Heat Input	8.6	MMBtu/hr
Potential Operation	8,760	hr/yr
Natural Gas Heating Value	1,020	Btu/scf
Natural Gas Combustion Limit	74	MMscf/yr

Table C-28. Boiler Potential Criteria and HAP Emissions

Pollutant	Natural Gas Emission Factor[1] (lb/MMscf)	Potential Emissions[2] (lb/hr)	(tpy)
CO	84	0.71	3.10
NO_X	50	0.42	1.85
Filterable PM	1.90	0.02	0.07
Condensable PM	5.70	0.05	0.21
Total PM	7.60	0.06	0.28
Total PM_{10}[3]	7.60	0.06	0.28
Total $PM_{2.5}$[3]	7.60	0.06	0.28
SO_2	0.6	0.01	0.02
VOC	5.5	0.05	0.20
Lead	5.00E-04	4.22E-06	1.85E-05
CH_4[4]	2.21E-03	1.86E-05	8.14E-05
N_2O[4]	2.21E-04	1.86E-06	8.14E-06
CO_2[4]	120,039	1,012.10	4,433
CO_2e[5]	120,039	1,012.10	4,433
HAP Emissions			
Arsenic Compounds	2.00E-04	1.69E-06	7.39E-06
Benzene	2.10E-03	1.77E-05	7.76E-05
Beryllium Compounds	1.21E-05	1.02E-07	4.47E-07
Cadmium	1.10E-03	9.27E-06	4.06E-05
Chromium Compounds	1.40E-03	1.18E-05	5.17E-05
Cobalt Compounds(CoC)	8.40E-05	7.08E-07	3.10E-06
Formaldehyde	7.50E-02	6.32E-04	2.77E-03
Hexane	1.80E+00	1.52E-02	6.65E-02
Lead	5.00E-04	4.22E-06	1.85E-05
Manganese	3.80E-04	3.20E-06	1.40E-05
Mercury	2.60E-04	2.19E-06	9.60E-06
Naphthalene	6.10E-04	5.14E-06	2.25E-05
Nickel Compounds	2.10E-03	1.77E-05	7.76E-05
Selenium Compounds	2.40E-05	2.02E-07	8.86E-07
Toluene(Methylbenzene)	3.40E-03	2.87E-05	1.26E-04
*Polycyclic Organic Matter (POM) * Polycyclic Aromatic Compounds (PAC)***			
2-Methylnaphthalene*	2.40E-05	2.02E-07	8.86E-07
3-Methylchloranthrene**	1.80E-06	1.52E-08	6.65E-08
7,12-Dimethylbenzo(a)anthracene**	1.60E-05	1.35E-07	5.91E-07
Acenaphthene*	1.80E-06	1.52E-08	6.65E-08
Acenaphthylene*	1.80E-06	1.52E-08	6.65E-08
Anthracene*	2.40E-06	2.02E-08	8.86E-08
Benzo(a)anthracene**	1.80E-06	1.52E-08	6.65E-08
Benzo(a)pyrene**	1.20E-06	1.01E-08	4.43E-08
Benzo(b)fluoranthene**	1.80E-06	1.52E-08	6.65E-08
Benzo(k)fluoranthene)**	1.80E-06	1.52E-08	6.65E-08
Benzo(g,h,i)perylene*	1.20E-06	1.01E-08	4.43E-08
Chrysene(Benzo(a)phenanthrene)**	1.80E-06	1.52E-08	6.65E-08
Dibenzo(a,h)anthracene**	1.20E-06	1.01E-08	4.43E-08
Fluoranthene*	3.00E-06	2.53E-08	1.11E-07
Fluorene*	2.80E-06	2.36E-08	1.03E-07
Indeno(1,2,3-cd)pyrene**	1.80E-06	1.52E-08	6.65E-08
Phenanathrene*	1.70E-05	1.43E-07	6.28E-07
Pyrene*	5.00E-06	4.22E-08	1.85E-07
		Total HAP	**0.07**

1. Uncontrolled emission factors for natural gas combustion from AP-42, Section 1.4 - Natural Gas Combustion, Table 1.4-1,3 (9/03). Low-NO_X burner for NO_X emission factor.
2. Potential emissions are calculated as follows:
Potential Emissions (lb/hr) = [Natural Gas Combustion EF (lb/MMBtu) * Heat Input Capacity (MMBtu/hr)] * (1 - Control efficiency (%))
Potential Emissions (tpy) = Hourly emissions (lb/hr) * Operation (hr/yr) / 2,000 (lb/ton)
3. Emission factors for Total PM_{10} and Total $PM_{2.5}$ are the sum of the filterable and condensable components. It is conservatively assumed that filterable PM = filterable PM_{10} = filterable $PM_{2.5}$.
4. Emission factors for CO_2, N_2O, and CH_4 from 40 CFR Part 98, Subpart C, Table C-1 amended December 9, 2016 and Table C-2 amended May 14, 2024.
5. CO_2e is calculated using Global Warming Potentials (GWPs) from 40 CFR Part 98, Subpart A, Table A-1 updated January 1, 2025. GWPs used for CO_2, CH_4, and N_2O are listed below.

CO_2	1
CH_4	28
N_2O	265

Table C-29. Emergency Fire Pump Operating Parameters

Parameter	Value	Units
Fuel	Diesel	
Maximum Power Output[1]	164	kW
Maximum Power Output[1]	220	hp
Potential Operation	500	hr/yr
Power Conversion[2]	7,000	Btu/hp-hr
Maximum Heat Input[3]	1.54	MMBtu/hr

1. Maximum power output based on regulatory requirements.
2. Conversion factor for diesel fuel as noted in AP-42, Section 3.3, Table 3.3-1 footnote.
3. Calculated as Power Conversion (Btu/hp-hr) * Power Output (hp) / 10^6 (Btu/MMBtu).

Table C-30. Emergency Fire Pump Potential Criteria and HAP Emissions

Pollutant	Emission Factor[1] (lb/hp-hr)	Emission Factor[1] (lb/MMBtu)	Potential Emissions[5,6] (lb/hr)	Potential Emissions[5,6] (tpy)
NO_X	6.61E-03	0.94	1.46	0.36
VOC	2.47E-03	0.35	0.54	0.14
CO	5.73E-03	0.82	1.26	0.32
Filterable PM	3.31E-04	0.05	0.07	1.82E-02
Total PM[2]	3.31E-04	0.05	0.07	0.02
Total PM_{10}[2]	2.20E-03	0.31	0.48	0.12
Total $PM_{2.5}$[2]	2.20E-03	0.31	0.48	0.12
SO_2	2.05E-03	0.29	0.45	0.11
CO_2	1.15	164.3	253.00	63.25
CH_4[3]	4.63E-05	6.61E-03	1.02E-02	2.55E-03
N_2O[3]	9.26E-06	1.32E-03	2.04E-03	5.09E-04
CO_2e[4]	1.15	164.8	253.83	63.46
Acetaldehyde	5.37E-06	7.67E-04	1.18E-03	2.95E-04
Acrolein	6.48E-07	9.25E-05	1.42E-04	3.56E-05
Benzene	6.53E-06	9.33E-04	1.44E-03	3.59E-04
1,3-Butadiene	2.74E-07	3.91E-05	6.02E-05	1.51E-05
Formaldehyde	8.26E-06	1.18E-03	1.82E-03	4.54E-04
Propylene	1.81E-05	2.58E-03	3.97E-03	9.93E-04
Naphthalene	5.94E-07	8.48E-05	1.31E-04	3.26E-05
Toluene	2.86E-06	4.09E-04	6.30E-04	1.57E-04
Xylene (o)	2.00E-06	2.85E-04	4.39E-04	1.10E-04
*Polycyclic Organic Matter (POM) * Polycyclic Aromatic Compounds (PAC)***				
Acenaphthene*	9.94E-09	1.42E-06	2.19E-06	5.47E-07
Acenaphthylene*	3.54E-08	5.06E-06	7.79E-06	1.95E-06
Anthracene*	1.31E-08	1.87E-06	2.88E-06	7.20E-07
Benzo(a)anthracene**	1.18E-08	1.68E-06	2.59E-06	6.47E-07
Benzo(a)pyrene**	1.32E-09	1.88E-07	2.90E-07	7.24E-08
Benzo(b)fluoranthene**	6.94E-10	9.91E-08	1.53E-07	3.82E-08
Benzo(k)fluoranthene**	1.09E-09	1.55E-07	2.39E-07	5.97E-08
Benzo(g,h,i)perylene*	3.42E-09	4.89E-07	7.53E-07	1.88E-07
Chrysene**	2.47E-09	3.53E-07	5.44E-07	1.36E-07
Dibenzo(a,h)anthracene**	4.08E-09	5.83E-07	8.98E-07	2.24E-07
Fluoranthene*	5.33E-08	7.61E-06	1.17E-05	2.93E-06
Fluorene*	2.04E-07	2.92E-05	4.50E-05	1.12E-05
Indeno(1,2,3-cd)pyrene**	2.63E-09	3.75E-07	5.78E-07	1.44E-07
Phenanthrene*	2.06E-07	2.94E-05	4.53E-05	1.13E-05
Pyrene*	3.35E-08	4.78E-06	7.36E-06	1.84E-06
			Total HAP:	**2.48E-03**

1. Emission factors from AP-42 Section 3.3 (Gasoline and Diesel Industrial Engines), Table 3.3-1 and 3.3-2 (10/96), except for NOx, CO, and filterable PM. For these three pollutants, Table 4 to NSPS Subpart III limits used for 2009 or newer fire pump engine (with NOx = NMHC + NOx, conservatively).
2. All PM is assumed to have a diameter of less than one micron. Additionally, there is no CPM factor available; thus, PM = PM_{10} = $PM_{2.5}$.
3. CH_4 and N_2O factors are from 40 CFR Part 98, Table C-2 for petroleum fuels.
4. CO_2e is calculated using Global Warming Potentials (GWPs) from 40 CFR Part 98, Subpart A, Table A-1 updated January 1, 2025. GWPs used for CO_2, CH_4, and N_2O are listed below.

CO_2	1
CH_4	28
N_2O	265

5. Short-term emissions are calculated as follows:
Emissions (lb/hr) = Emission Factor (lb/hp-hr) * Engine Capacity (hp)
6. Annual emissions are calculated as follows:
Annual Emissions (tpy) = Hourly Emissions (lb/hr) * Annual Operation (hr/yr) / 2,000 (lb/ton)

Table C-31. Truck Traffic Parameters

Parameter	Value	Units
Trucks - Whole Logs	551,155	tpy
	1,510	tons/day
	27	tons/load
	56	loads/day
Trucks - Green Residuals	165,347	tpy
	453	tons/day
	28	tons/load
	17	loads/day
Delivery Hours	24	hr/day

Table C-32. Vehicle Data

Type of Vehicles	Unloaded Weight (tons)	Loaded Weight (tons)	Unloaded Distance (mi/load)	Loaded Distance (mi/load)	Loads (per day)	Total Distance per Load (miles/load)	Max Hr Load (miles/hr)	Annual Load Distance (miles/yr)	% Annual Load Distance	Adj Weight (ton)
Truck Route - Whole Logs	15.0	42.0	0.42	0.30	56	0.72	1.68	14,711	70.25%	18.52
Truck Route - Green Residuals	15.1	43.3	0.74	0.27	17	1.00	0.71	6,229	29.75%	6.71
						Totals:	**2.39**	**20,939**		**25.23**

Emission Factors (lb/VMT)

Paved Roads

$E_{hourly} = k\ (sL)^{0.91} \times (W)^{1.02}$ AP-42, Section 13.2.1.3, eq 1

$E_{annual} = [\ k\ (sL)^{0.91} \times (W)^{1.02}\ ]\ (1 - P/4N)$ AP-42, Section 13.2.1.3, eq 2

where: E_{hourly} = particulate emission factor (lb/VMT) for hourly emissions

E_{yearly} = particulate emission factor (lb/VMT) for annual emissions

k = is the particulate size multiplier in lb/VMT	k (PM)	0.011	$k(PM_{10})$	0.0022
sL = silt loading in g/m^2, utilized 3.0 g/m^2 (accepted by ADEQ for Highland Pellets)		3		
W = average weight of all the vehicles traveling on the haul roads in tons		25.23		
P = number of days with at least 0.01 in. of precipitation per year, Figure 13.2.1-9		110		
N = number of days in the average period		365		

Table C-33. Paved Road PM Emission Factors

Pollutant	lb/VMT	
	Hourly	Annual
PM	0.80	0.74
PM_{10}	0.16	0.15

Table C-34. Paved Road PM Emissions

Pollutant	Potential Emissions (lb/hr)	(tpy)
PM	1.92	7.79
PM_{10}	0.38	1.56

APPENDIX D. SUPPORTING DOCUMENTATION

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GAEPD RECOMMENDED EMISSION FACTORS FOR WOOD PELLET MANUFACTURING

Emission Source	Uncontrolled Emission Factor	Basis of Emission factor	Control Device
Rotary Dryer Direct wood fired processing green softwood	6.0 lb/ODT for VOC	AP-42 Table 10.6.2-3 SCC 3-07-006-25 (Adjusted)	If emissions are routed to the dryer with WESP/RTO controls use 95% DRE for VOC and HAP
	5.3 lb/ODT for CO	AP-42 Table 10.6.1-2 SCC3-07-010-09	
	2.7 lb/ODT for NOx	AP-42 Table 10.6.2-2 SCC 3-07-006-25	
	2.2 lb/ODT for PM total	AP-42 Table 10.6.2-1 SCC 3-07-006-25	
	1.1 lb/ODT for PM Condensible	AP-42 Table 10.6.2-1 SCC 3-07-006-25	
	0.11 lb/ODT for Acetaldehyde	AP-42 Table 10.6.2-3 SCC 3-07-006-25 (Adjusted)	
	0.14 lb/ODT for Formaldehyde	AP-42 Table 10.6.2-3 SCC 3-07-006-25	
	0.11 lb/ODT ton for Methanol	AP-42 Table 10.6.2-3 SCC 3-07-006-25	If WESP is used for PM control use 70% removal efficiency for HCl (pH of the water needs to be monitored and maintained)
	1.9 E-02 lb/MM Btu for HCl	AP-42 Table 1.6-3	
Hammermill	2.5 lb VOC/ton product	Georgia Biomass Testing	If emissions are routed to dryer 90 % DRE for VOC and HAP
	0.004 lb/ton of product for Acetaldehyde	Georgia Biomass- prorated from Pellet Cooler testing	
	0.008 lb/ton of product for Formaldehyde	Georgia Biomass-prorated from Pellet Cooler testing	If emissions are routed to RTO use 95 % DRE for VOC and HAP. .
	0.004 lb/ton for Methanol	Georgia Biomass-prorated from Pellet Cooler testing	

Emission Source	Uncontrolled Emission Factor	Basis of Emission factor	Control Device
Pelletizer/Pellet Cooler (without Steam injection or extraction)	0.5 lb VOC/ton of Product	Georgia Biomass Testing	If emissions are routed to dryer 90 % DRE for VOC and HAP
	0.001 lb/ton of product for Acetaldehyde	Georgia Biomass Testing	
	0.002 lb/ton of product for Formaldehyde	Georgia Biomass Testing	If emissions are routed to RTO use 95 % DRE for VOC and HAP.
	0.001 lb/ton of product for Methanol	Georgia Biomass Testing	
Pelletizer/Pellet Cooler (with Steam injection)	1.3 lb VOC/ton of product	Georgia Biomass Testing	If emissions are routed to dryer 90 % DRE for VOC and HAP
	0.002 lb/ton of product for Acetaldehyde	Georgia Biomass- prorated from Pellet Cooler testing	
	0.004 lb/ton of product for Formaldehyde	Georgia Biomass- prorated from Pellet Cooler testing	If emissions are routed to RTO use 95 % DRE for VOC and HAP.
	0.002 lb/ton of product for Methanol	Georgia Biomass- prorated from Pellet Cooler testing	
Storage/Handling	0.4 lb VOC/ton of product	Georgia Biomass Testing	If emissions are routed to dryer 90 % DRE for VOC and HAP
	0.001 lb/ton of product for Acetaldehyde	Georgia Biomass- prorated from Pellet Cooler testing	
	0.002 lb/ton of product for Formaldehyde	Georgia Biomass- prorated from Pellet Cooler testing	If emissions are routed to RTO use 95 % DRE for VOC and HAP
	0.001 lb/ton of product for Methanol	Georgia Biomass- prorated from Pellet Cooler testing	

Note: These are GAEPD recommended emission factors. Use of these emission factors does not guarantee compliance with all state and federal regulations