STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

Godfrey Forest Arizona, LLC **Franklin County** **Jay, Maine** **A-1181-77-1-N**	**Departmental** **Findings of Fact and Order** **New Source Review** **NSR #1**

FINDINGS OF FACT

After review of the air emission license application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Godfrey Forest Arizona, LLC
LICENSE TYPE	06-096 C.M.R. ch. 115, New Major Source
NAICS CODES	321219
NATURE OF BUSINESS	Reconstituted Wood Product Manufacturing
FACILITY LOCATION	300 Riley Road, Jay, Maine

B. NSR License Description

Godfrey Forest Arizona, LLC (Godfrey) has requested a New Source Review (NSR) license to construct and operate a new oriented strand board (OSB) manufacturing facility located on a former pulp and paper mill site in Jay, Maine. This project is referred to in this license as the Godfrey OSB Mill Project.

C. Title, Right, or Interest

In their application, Godfrey submitted a copy of a purchase and sale agreement demonstrating rights to title for the facility. Godfrey has provided sufficient evidence of title, right, or interest in the facility for purposes of this air emission license.

D. Emission Equipment

The following equipment is addressed in this NSR license. The date of manufacture and installation is unknown at this time, but all emissions units are expected to be new units.

Fuel Burning Equipment

Equipment	Maximum Heat Input Capacity* (MMBtu/hr)	Fuel Type
Furnace #1	220	biomass (bark, wood, mill trimmings)
Furnace #2	220	biomass (bark, wood, mill trimmings)
RTO #1 (Dryer #1)	16	natural gas
RTO #2 (Dryer #2)	16	natural gas
RTO #3 (Press #1)	30.5	natural gas
TOS Backup Heater	50	natural gas
Generator #1	5.0	distillate fuel

* All heat input capacities listed are proposed total maximums for each unit. Emissions units with lower heat input capacities may be installed.

Process Equipment

Equipment	Unit Capacity	Pollution Control Equipment
Dryer #1	40 ODT/hr [a]	Wet ESP #1 & RTO #1
Dryer #2	40 ODT/hr [a]	Wet ESP #2 & RTO #2
Press #1	160 $MSF_{3/8}$/hr [b]	Wet Scrubber #1 & RTO #3
Edge Seal Spray Booth	N/A	Filters low-VOC coatings

[a] ODT/hr = oven dried tons of wood strands per hour
[b] $MSF_{3/8}$/hr = thousands of square feet at a thickness of 3/8-inch per hour

The following dust collection systems are controlled by material separation cyclones followed by a baghouse.

Material Handling Process Equipment

Equipment	Pollution Control Equipment
Green End Dust Collection System	Baghouse #1
Dry Dust Collection System	Baghouse #2
Resonated Dust Collection System	Baghouse #3
Finishing Area Dust Collection System	
- Trim Saw	Baghouse #4
- Sanding	Baghouse #5
- Tongue & Groove	Baghouse #6

Godfrey proposes to install other emission units that are considered insignificant activities pursuant to 06-096 Code of Maine Rules (C.M.R.) ch. 115, Appendix B.

E. Definitions

Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (*e.g.,* trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings). This definition also includes wood chips and processed pellets made from wood or other forest residues. This definition also includes wood as defined in 40 Code of Federal Regulations (C.F.R.) Part 60, Subpart Db. Inclusion in this definition does not constitute a determination that the material is not considered a solid waste. Godfrey should consult with the Department before adding any new biomass type to its fuel mix.

Continuously means equally spaced data points with at least one valid data point in each successive 15-minute period. A minimum of three valid 15-minute periods constitutes a valid hour.

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

Records or *Logs* mean either hardcopy or electronic records.

Safety-Related Shutdown means (as defined in 40 C.F.R. § 63.2292) an unscheduled shutdown of Dryer #1, Dryer #2, or Press #1 during which time emissions from the process unit cannot be safely routed to the control system without imminent danger to the process, control system, or system operator.

F. Project Description

Godfrey proposes the installation of a new OSB manufacturing facility. The OSB manufacturing process consists of five major components: (1) green end handling of the incoming logs and processing them into strands; (2) drying of the strands; (3) screening, blending, and forming of the strands into a mat; (4) pressing the mat into the final OSB product; and (5) finishing, which includes trimming, sanding, and stacking the final OSB product. The thermal energy necessary throughout will be provided by a centralized Thermal Energy System.

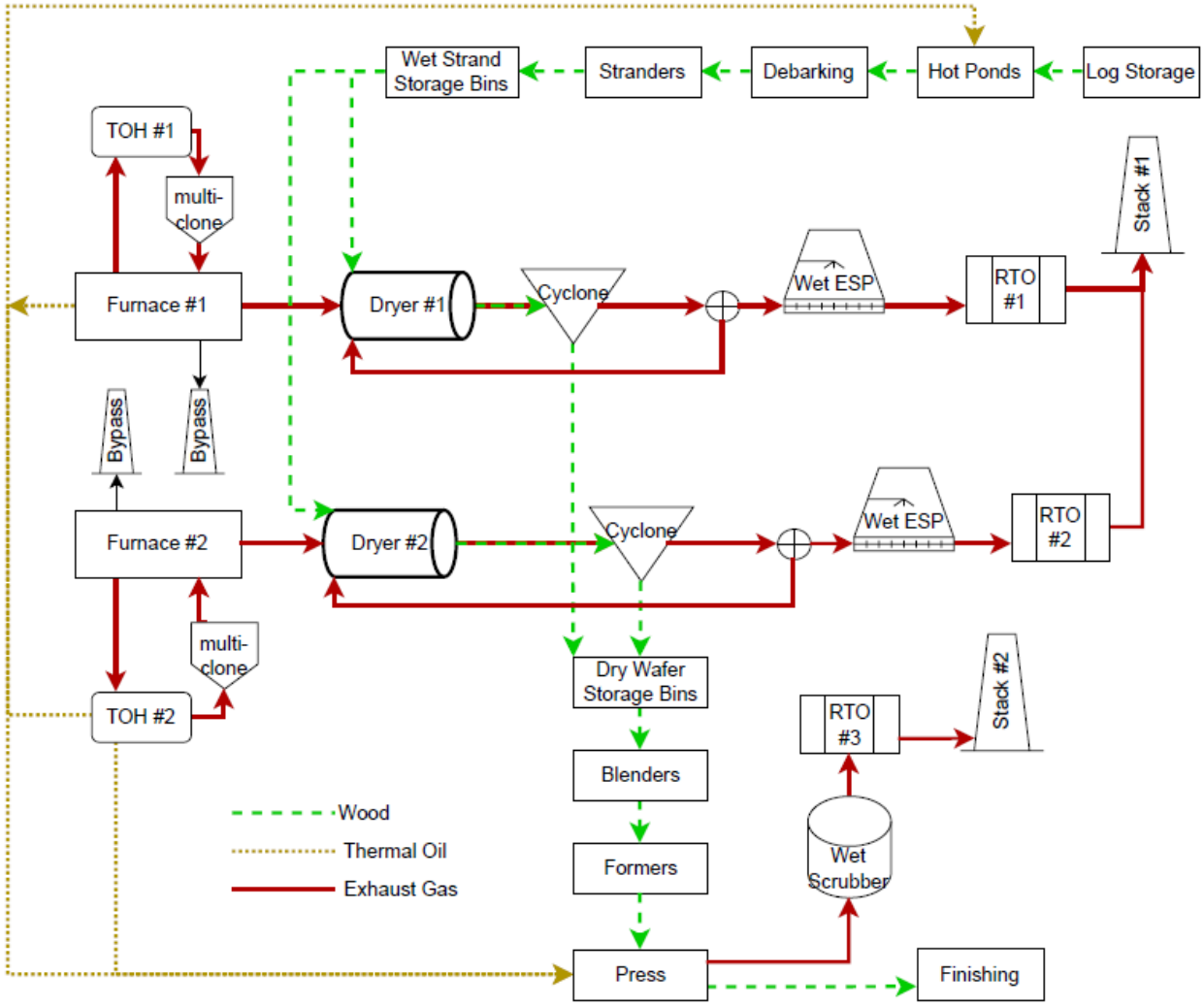
Following is an overview of the facility's major areas, processes, and systems.

1. Green End

The proposed facility receives whole harvested logs, primarily white pine, which are received by truck and stored in the log storage area. Logs then travel through log conditioning ponds where they are soaked in water to thaw and clean the wood, preparing them for subsequent processing. The log conditioning ponds are heated as necessary during colder months. Heat is provided by the centralized Thermal Energy System described below. Both the log storage yard and log ponds are considered insignificant activities pursuant to 06-096Code of Maine Rules (C.M.R.) ch. 115, Appendix B, §§ B.107 and B.110, respectively.

The conditioned logs are fed through debarking machines to remove the bark from the wood to ensure the quality and cleanliness of the strands. Following debarking, logs enter stranders where they are mechanically shredded into small, thin strands with a targeted width, thickness, and length. The wood strands are then conveyed to green strand storage bins.

A green end dust collection system consisting of a material separation cyclone followed by a baghouse is used to control emissions of particulate matter (PM) from the stranding process, pneumatic conveying of the wet wood strands, and the fuel conveying and metering to the Thermal Energy System. The bark removed from the logs and any other wood waste from the green end process, including material collected in the dust collection system, is used as fuel in the Thermal Energy System.



2. Drying System

The green strand storage bins meter wet wood strands into two parallel drying lines each consisting of a single-pass rotary dryer (Dryers #1 and #2). The dryers use exhaust gases from the Thermal Energy System to dry the wood strands to a moisture content of approximately 2 – 8%.

Each dryer has its own dedicated set of controls. The dry strands and exhaust gases exiting the dryer are separated using a cyclone. A portion of the exhaust gas is recirculated back to the dryer inlet where it is mixed with incoming hot gas to achieve the desired dryer inlet temperature. The remaining exhaust gases are ducted to a wet electrostatic precipitator (WESP) followed by a regenerative thermal oxidizer (RTO).

The WESPs (WESPs #1 and #2) are primarily designed to remove any carry-over PM remaining in the dryer exhaust gases. They will consist of a quench duct that sprays water into the incoming gas, removing larger PM and condensing semi-volatile

organics. Following the quench duct, gases enter the electrostatic precipitator (ESP) area consisting of multiple high voltage discharge electrodes suspended in a tube bundle. Exhaust gases travel upward through the tube bundle. PM in the exhaust picks up a negative charge and migrates to grounded electrodes (the tube walls). Water cleans the tube walls of PM buildup through periodic flush cycles from overhead nozzles. Solids in the flush water are removed by decanter centrifuges and the water is recycled.

The RTOs (RTOs #1 and #2) are designed to destroy volatile organic compounds (VOC) and reduce carbon monoxide (CO) emissions. Each RTO will be equipped with one or more natural gas-fired burners with a total heat input not to exceed 16 MMBtu/hr.

Each dryer has its own dedicated WESP and RTO train after which exhaust gases are combined before exiting through a common 165-foot-tall stack (Stack #1).

3. Screening, Blending, and Forming

Following the dryers, the wood strands are screened and sorted into dry bins based on their size (intermediate, face, or core) before being sent to the blenders. Any wood strands that do not meet specifications are conveyed to the dry fuel storage silo to be used as fuel in the Thermal Energy System.

The dry strands are blended with phenol-formaldehyde (PF) and polymeric methylene diphenyl diisocyanate (pMDI) resins and an emulsified wax. Godfrey proposes installing four blending drums, one each for intermediate, face, and core strands and one capable of processing any strand size. Resins and wax will be added to the blenders through atomizers to enhance the adhesion of resin and wax on the surfaces of the strands.

The coated strands are then metered out and mechanically oriented onto a continuous moving screen system. The strands are placed so that strands for the top and core surfaces of the panel are aligned in one direction and the interior strands in the opposite direction to build a “mat.” The perpendicular adjacent layers provide the final OSB product with flexural properties similar to plywood. From the forming area, the mat travels to the press.

Dust is collected from various pick-up points in the screening, blending, forming, and conveying area and controlled by two dust collection systems, a Dry Dust Collection System and a Resonated Dust Collection System, both of which consist of material separation cyclones followed by baghouse or cartridge filter systems.

Emissions of VOC and hazardous air pollutants (HAP) can be emitted from the dry wood strands, which are still warm after exiting the dryer, and the resins that have been

blended with them. The HAP emitted are primarily acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde.

4. Press Area

Once formed, the strand mat travels to a single continuous press (Press #1) where heat and pressure are applied. The press consolidates the strands and cures the resin, creating a solid panel. The temperature, pressure, and time the mat spends in the press are controlled to ensure proper curing and bonding of the resulting 3/8" thick solid OSB panel.

Heat for the press is supplied by thermal oil that is heated from the Thermal Energy System. Water vapor and emissions of VOC and HAP, released from the strand mats as they travel through the press, are collected by a number of exhaust gas extraction points along the length of the press. The exhaust gas extraction points are located in close proximity to the mats, resulting in PM and wood fibers being pulled into the exhaust stream along with the VOC/HAP from the mat curing. The exhaust extraction points are equipped with water sprays to prevent caking, accumulation, and fire risk due to the sticky nature of the exhaust stream.

The exhaust streams from Press #1 are routed to a wet scrubber before entering an RTO (RTO #3). RTO #3 will be equipped with one or more natural gas-fired burners with a total heat input not to exceed 30.5 MMBtu/hr. Exhaust gases from RTO #3 exit through a 150-foot tall stack.

5. Finishing Area

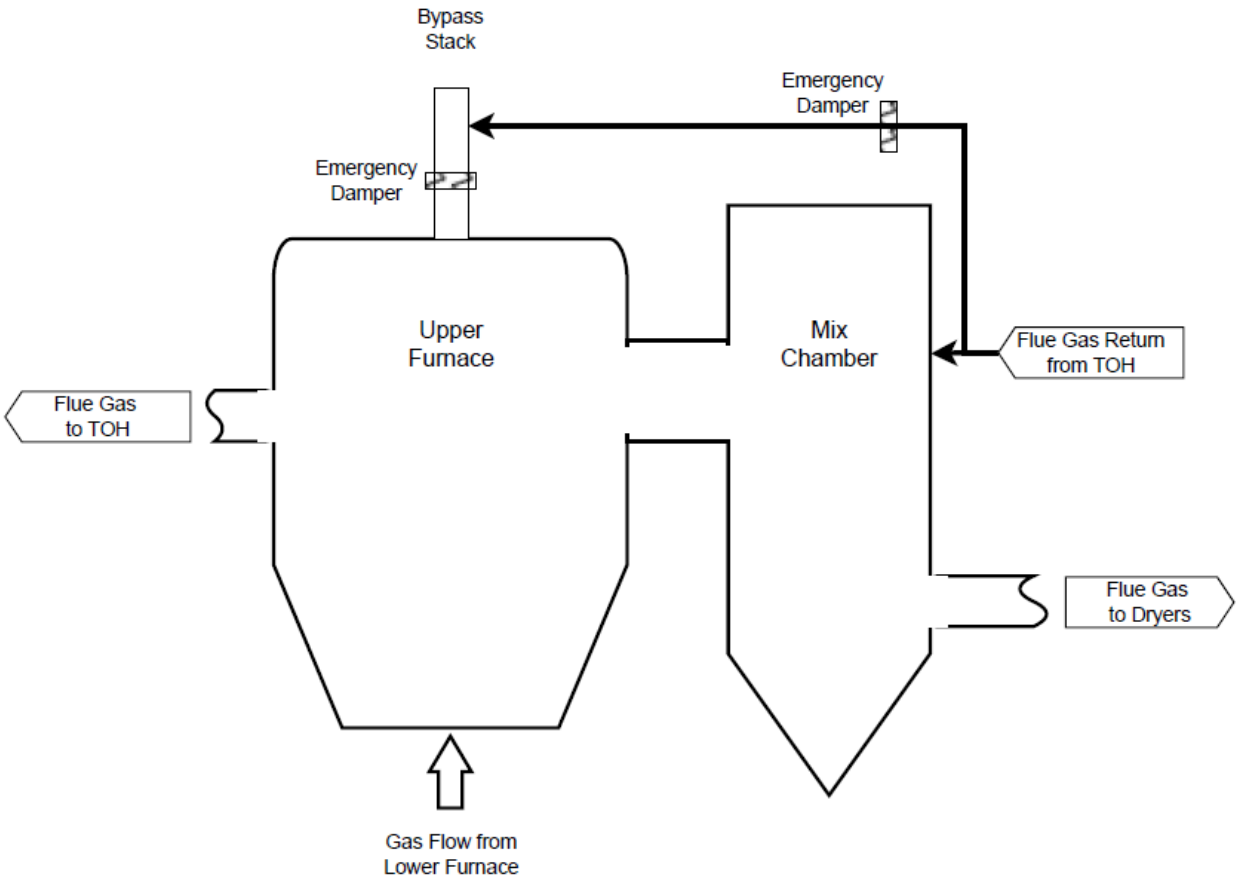
The pressed mats travel to the finishing area where they are cut and trimmed into panels of the desired dimensions. Some panels may be cut with a tongue-and-groove edge. Operations in the finishing area include sawing, stacking, and sanding before the final product is warehoused. Any panels that do not meet specifications will be recycled back into the process or used for fuel. PM emissions from this area are controlled by a dust collection system with pick-up points at each dust generating area including the sawing, sanding, and tongue-and-groove cutting operations. The dust collection system consists of three cyclones and three baghouse or cartridge filter systems which pneumatically convey collected materials to the dry fuel storage bin for combustion.

After finishing, the OSB boards may have an edge seal material applied to the cut edges of the products to minimize the amount of moisture entering into the edge of the product.

6. Thermal Energy System

The Thermal Energy System consists of two furnaces (Furnaces #1 and #2) and a Thermal Oil Heating System. Furnaces #1 and #2 each have a maximum heat input of 220 MMBtu/hr and fire biomass. Exhaust from each furnace provides direct contact heat to a dedicated dryer, i.e., Furnace #1 provides heat to Dryer #1, and Furnace #2 provides heat to Dryer #2.

A portion of each furnace's exhaust gas is routed to the Thermal Oil Heating System. These exhaust gases come off of the upper chamber of the furnace. The Thermal Oil Heating System consists of two thermal oil heaters (TOHs #1 and #2) that are indirect contact heat exchangers that produce hot oil used to provide heat to Press #1, the log conditioning ponds, wax systems, and for general facility heating. TOHs #1 and #2 are each designed to collect up to 158 MMBtu/hr of thermal energy. After being used in the TOH, the furnace exhaust gases pass through a multicyclone before being returned to the furnace via a mix chamber downstream of the upper furnace as shown below.



One of the TOHs will be equipped with a single natural gas-fired burner rated at no more than 50 MMBtu/hr (TOS Backup Heater). This burner is designed to provide standby heat for the Thermal Oil Heating System and is intended only to operate when one or both of the furnaces are shut down or not able to keep up with the demand for heat.

An emergency generator (Generator #1) will provide backup power to the facility in the event that grid power is lost. In addition to providing electrical power to control systems, it will provide energy for an emergency cooling system for the Thermal Oil Heating System. Generator #1 is powered by a distillate-fired engine expected to provide approximately 500 kW of power with a brake horsepower rating not to exceed 1,000 bHP.

G. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

A new source is considered a major source based on whether or not total licensed annual emissions exceed the "Significant Emissions" levels as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100.

Pollutant	Total Licensed Annual Emissions (tpy)	Significant Emission Levels
PM	124.9	100
PM_{10}	124.9	100
$PM_{2.5}$	124.9	100
SO_2	48.4	100
NO_x	586.8	100
CO	396.3	100
VOC	417.4	100
CO_2e	434,878	75,000

The Department has determined the facility is a major source for PM, PM_{10}, $PM_{2.5}$, NO_x, CO, and VOC, and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115.

As a new major stationary source for an NSR pollutant, other than greenhouse gases (GHGs), resulting in potential emissions of more than 75,000 tpy of carbon dioxide equivalent (CO_2e), this facility is also determined to be major for GHGs pursuant to 40 C.F.R. § 51.166(b)(48)(iv)(a).

Godfrey shall apply for a Part 70 license under *Part 70 Air Emission License Regulation*, 06-096 C.M.R. ch. 140 § 3 within 12 months of commencing operation, as provided in 40 C.F.R. Part 70.5.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Green End Processing

The green end processing consists of log receiving, debarking, stranding, storage, and conveying. Point sources of particulate matter include the stranders, conveyance points, and metering points. Godfrey proposes to collect emissions from these areas using a pneumatic dust collection system that includes a cyclone separator followed by a baghouse.

A review of similar projects in the RBLC did not identify any control technology for particulate matter other than a baghouse. The use of a baghouse has a control efficiency of greater than 99%.

The Department finds the use of a material separation cyclone followed by a baghouse designed to have a greater than 99% control efficiency and an emission limit of 0.01 lb/hr to represent BACT for particulate matter emissions from the Green End Dust Collection System.

Visible emissions from the baghouse shall not exceed 10% opacity on a 6-minute block average basis.

Compliance with the particulate matter emission limit and the visible emissions limit shall be demonstrated through performance testing conducted upon request by the Department.

Green end operations are included in the "affected source" as defined by *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products*,

40 C.F.R. Part 63, Subpart DDDD, § 63.2232(b). Requirements of Subpart DDDD are addressed in Section II(I) of this license.

C. Furnaces/Dryers #1 and #2

As described above, the exhaust from each furnace will be used to dry wood strands in its associated dryer, e.g., the exhaust from Furnace #1 is used in Dryer #1. Furnaces #1 and #2 will fire biomass fuel consisting primarily of green wood and bark as well as dry sawdust and trimmings from the OSB manufacturing process. Each furnace will have a maximum heat input of 220 MMBtu/hr and will be equipped with primary under-fire air and secondary over-fire air. A secondary (upper) combustion chamber provides final combustion of the gases and distributes flue gases to the thermal oil heaters (TOHs #1 and #2), which are described in more detail later. Flue gas returning from TOHs #1 and #2 will pass through a multicyclone before being returned to the furnace via a mix chamber downstream of the upper furnace.

From the mix chamber, flue gases are routed to the associated dryer (Dryer #1 or #2). Each dryer is a single-pass rotary dryer with a production capacity of approximately 40 ODT/hr. The green strand storage bins meter wet wood strands into each dryer. The dryer tumbles the wet wood strands while exhaust gases from the furnace pass through them, drying the wood strands to a moisture content of approximately 2 – 8%.

As described below, Godfrey has proposed the use of a WESP followed by an RTO for control of emissions from each furnace/dryer line. After passing through the separate control equipment, all gases from Furnace #1 and Dryer #1 are combined with all gases from Furnace #2 and Dryer #2 before exhausting through a combined stack (Stack #1). Stack #1 has a minimum height of 165 feet above ground level.

Each furnace will be equipped with an emergency bypass stack mounted directly on top of the upper furnace chamber (Bypass Stacks #1 and #2). They are designed to vent hot gases from the furnace and its thermal oil system in an emergency situation. Except during commissioning as described later in this license, the emergency bypass stacks are to be used only when the furnace exceeds acceptable operating parameters or during power failures. Acceptable operating parameters are exceeded when the furnace temperature is above 2,000 °F or the furnace experiences positive pressure. Godfrey shall monitor each bypass stack damper and keep records of the date, time, and duration for all instances when an emergency bypass stack is used. These records shall include the reason the emergency bypass stack was used and any corrective action taken.

1. BACT Findings

Godfrey submitted a BACT analysis for control of emissions from each furnace and dryer train. Following is a summary of that analysis. Because the emissions from each furnace are inherent to the dryer system and all exhaust gases from each furnace/dryer

combination are comingled, these systems have been evaluated as a single emissions unit for the purposes of BACT. The systems will be referred to as Furnaces/Dryers #1 and #2.

a. Volatile Organic Compounds (VOC)

Emissions of VOC from Furnaces/Dryers #1 and #2 come from both the incomplete combustion of organic compounds in the fuel and the evaporation of naturally occurring VOC in the wood being dried.

(1) Identify Potential Control Options

Potential post-combustion control technologies for VOC considered include carbon adsorbers, condensers, wet scrubbers, biofiltration, oxidation catalysts, and thermal oxidizers.

Adsorption Systems
Adsorption is the process by which molecules collect on and adhere to the surface of an adsorbent solid due to physical and/or chemical forces. Activated carbon is typically used as an adsorbent because of its large surface area which is a critical factor in the adsorption process although other materials, such as zeolite and polymers, may also be used. Once the adsorbent medium becomes saturated with VOC, it undergoes a desorption process where the adsorbent is regenerated using thermal or chemical processes.

Condensers
Condensers utilize a refrigeration source to cool the exhaust stream to convert the VOC from a gaseous phase to a liquid phase.

Wet Scrubbers
Wet scrubbers utilize gas and liquid contact to absorb VOC from the exhaust stream into a liquid stream. Depending on the characteristics of the VOC contaminants, the scrubbing liquid may be acid, caustic, water, or organic in nature. When the exhaust stream comes into contact with the liquid scrubbing solution, either through spray nozzles or a packed bed, the pollutants in the gas stream are captured by the liquid primarily through absorption. VOC contaminants collected in the scrubbing liquid must then be removed by subsequent processing. The scrubbing liquid is generally then recycled back into the scrubber system.

Biofiltration
In a biofilter, the exhaust gas stream is humidified, then passed through a distribution system beneath a bed of compost, bark mulch, or soil. The media in the bed contains an active population of bacteria and other microbes. As the

air stream flows upward through the media, pollutants are adsorbed into the media and converted by microbial metabolism to form carbon dioxide and water.

Oxidation Catalysts
In the presence of a catalyst, VOC will react with oxygen present in the exhaust stream converting the compounds to carbon dioxide. No supplementary reactant is used in conjunction with an oxidation catalyst. Catalysts are typically based on a noble metal and operate by decreasing the temperature at which oxidation will occur. The catalyst lowers the activation energy necessary for VOC to react with available oxygen.

Thermal Oxidizers
A thermal oxidizer raises the temperature of the exhaust stream to oxidize (burn) or pyrolyze (thermally break down) the constituents. In the case of VOC, complete combustion produces carbon dioxide and water. Regenerative thermal oxidizers (RTOs) use heat exchangers to preheat the exhaust and/or recover waste heat from the treated air stream. Regenerative catalytic oxidizers (RCOs) operate in a similar manner except that they contain a catalyst that allows the oxidation to take place at significantly lower temperatures

(2) Eliminate Infeasible Control Options

Adsorption Systems
A review of similar projects in the US EPA's RACT-BACT-LAER Clearinghouse (RBLC) did not identify any that utilized adsorption systems. The exhaust stream from the Furnaces/Dryers contains a variety of VOC which are likely to change depending on the wood species being processed and seasonal conditions. This makes the design of an adsorbent system difficult. Furthermore, the moisture present in the exhaust stream can significantly hinder the pollutant adsorbent efficiency and can also promote biological growth on the adsorbent surface. Adsorption systems are not considered a proven technology for this type of application and has been determined not to be technically feasible for control of VOC from the furnaces and dryers.

Condensers
Condensers are most often used for high concentration exhaust streams. Recovery efficiencies greater than 95% can be achieved for exhaust streams with concentrations of 5,000 – 10,000 ppmv or greater. Recovery efficiencies are significantly less for exhaust streams with lower concentrations.

Because the exhaust from Furnaces/Dryers #1 and #2 are expected to have VOC concentrations significantly below 5,000 ppmv, the use of a condensation

system is determined to not be technically feasible for control of VOC from the furnaces and dryers.

Biofiltration

A review of similar projects in the RBLC did not identify any that utilized biofiltration systems. Biofilters work best at steady state conditions and cannot tolerate extended periods of downtime. The microbes in the bioreactor are sensitive to temperature swings, loading levels, and changes in available moisture. They are very sensitive to interruption in plant operations including shutdowns and preventative maintenance periods, which are routine occurrences. Any pollutant starvation that may occur as a result of downtime requires a significant re-acclimation period before optimal VOC removal efficiencies are achieved again. Because the microbes are sensitive to temperature, the exhaust stream may require cooling prior to entering the system and the entire system may need to be heated in the winter to avoid freezing. Therefore, the use of a biofiltration system is determined not to be technically feasible for control of VOC from the furnaces and dryers.

Oxidation Catalysts

Oxidation catalysts, including regenerative catalyst oxidizers (RCO) rely on surface area and catalyst activity to control emissions of VOC. Because the surface area is made up of very small pores, oxidation catalysts are very sensitive to particulate contamination from combustion exhaust gases. Additionally, the high alkalinity of the wood ash particles can significantly inhibit catalyst performance. Therefore, the use of an oxidation catalyst, including an RCO, is determined not to be technically feasible for control of VOC from the furnaces and dryers.

(3) Ranking of Control Options

The remaining control options considered have the following efficiencies for control of VOC.

Technology	Control Efficiency
RTO	95%
Wet Scrubber	40-80%

Godfrey has proposed the use of an RTO on each exhaust stream as BACT, i.e., RTO #1 for Furnaces/Dryer #1 and RTO #2 for Furnaces/Dryer #2. This represents the highest level of control. Godfrey has proposed an emission limit of 0.70 lb/ODT as BACT for emissions of VOC. This limit is lower than emission limits for similar projects identified in the RBLC.

(4) Determination

The Department finds the use of an RTO and the following emission limits to represent BACT for emissions of VOC from Furnaces/Dryers #1 and #2 (each):

Units	VOC
lb/ODT	0.70
lb/hr	25.90

These limits apply at all times except during safety-related shutdowns and commissioning as described later in this license.

(5) Compliance and Monitoring

Compliance with the VOC limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every five calendar years thereafter.

Godfrey shall monitor RTOs #1 and #2 pursuant to the most current version of 40 C.F.R. Part 63, Subpart DDDD.

b. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

Filterable and condensable particulate matter emissions from Furnaces/Dryers #1 and #2 may come from many sources. They may be formed from noncombustible constituents in the fuel or combustion air, or they may be products of incomplete combustion. Flue gases may pick up filterable particulate matter when passed through the wood strands to be dried. Also, organic material in the wood is volatilized into the exhaust stream. These materials are volatile organic compounds but some are also condensable organic PM.

(1) Identify Potential Control Options

Potential post-combustion control technologies for particulate matter considered include baghouses, ESPs, WESPs, wet scrubbers, and multicyclones.

Baghouses

Baghouses consist of a number of fabric bags placed in parallel that collect particulate matter on the surface of the filter bags as the exhaust stream passes through the fabric membrane. The collected particulate is periodically dislodged from the bags' surface to collection hoppers via short blasts of high-pressure air, physical agitation of the bags, or by reversing the gas flow.

ESPs/WESPs

ESPs work by charging particles in the exhaust stream with a high voltage, oppositely charging a collection surface where the particles accumulate, removing the collected dust by a rapping process, and collecting the dust in hoppers. In WESPs, the collectors are either intermittently or continuously washed by a spray of liquid, usually water. Instead of collection hoppers, a drainage system is used.

Wet Scrubbers

Wet scrubbers remove PM from exhaust streams using a liquid (usually water) to capture and neutralize contaminants. When the exhaust stream comes into contact with the liquid scrubbing solutions, either through spray nozzles or a packed bed, the pollutants in the gas stream are captured by the liquid primarily through absorption. The contaminant-laden liquid stream then must be processed to remove contaminants from the scrubbing liquid, typically through wastewater treatment processes. The scrubbing liquid is then generally recycled back into the scrubber system.

Multicyclones

Mechanical separators include cyclonic and inertial separators. In a multicyclone, centrifugal force separates larger particulate matter from the gas stream. The exhaust gas enters a cylindrical chamber on a tangential path and is forced along the outside wall of the chamber at a high velocity, causing the PM to impact collectors on the outer wall of the unit and fall into a hopper for collection.

(2) Eliminate Infeasible Control Options

Baghouses

Baghouses are not well suited to this application due to the high moisture content and organic loading of the exhaust stream. The condensable PM produced in the dryers is sticky and tar-like as well as flammable as it cools and condenses. It can cause significant plugging and fouling of the bag surfaces. Therefore, baghouses are considered technologically infeasible for this application.

(3) Ranking of Control Options

The remaining control options considered have the following efficiencies for control of particulate matter.

Technology	Control Efficiency
ESP/WESP	99%
Wet Scrubber	40-80%
Multicyclone	>50%

Godfrey has proposed the use of a WESP on each exhaust stream as BACT: one WESP for Furnace/Dryer #1 and a second WESP for Furnace/Dryer #2. This represents the highest level of control. Godfrey has proposed an emission limit of 0.23 lb/ODT as BACT for emissions of PM, PM_{10}, and $PM_{2.5}$ (each). This limit is similar to emission limits identified in the RBLC.

(4) Determination

The Department finds the use of a WESP and the following emission limits to represent BACT for particulate matter emissions from Furnaces/Dryers #1 and #2 (each):

Units	$PM/PM_{10}/PM_{2.5}$
lb/ODT	0.23
lb/hr	9.03

These limits apply at all times except during safety-related shutdowns and commissioning as described later in this license.

Visible emissions from Stack #1 shall not exceed 20% opacity on a 6-minute block average basis, except for periods of commissioning, startup, shutdown, malfunction, or RTO bake-out.

During periods of startup, shutdown, or malfunction, visible emissions from Stack #1 shall not exceed 40% opacity on a 6-minute block average basis. This alternative visible emissions standard shall not be utilized for more than two hours (20 consecutive 6-minute block averages) per event. Godfrey shall keep records sufficient to document the date, time, and duration of each event.

During periods of RTO bake-out, Godfrey must either meet the visible emission limits above or meet the following work practice standards and alternative visible emissions standard:

a. Godfrey shall keep records sufficient to document the date, time, and duration of each event;

b. Bake-out events shall not occur while either Furnace #1 or Furnace #2 are operating;

c. Bake-out events (where work practice standards are utilized) shall not occur more frequently than six times per calendar year;

d. Once the RTO chamber is at temperature for bake-out to begin, the duration of each bake-out event shall not exceed three hours; and

e. During the bake-out event, visible emissions shall not exceed 60% opacity on a 6-minute block average basis.

(5) Compliance and Monitoring

Compliance with the particulate matter limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every other calendar year thereafter.

Except as noted below, compliance with the visible emissions standards shall be demonstrated pursuant to the requirements of 40 C.F.R. Part 60, Subpart Db.

Compliance with the visible emissions standards during periods of startup, shutdown, or malfunction shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9, upon request by the Department.

Compliance with the alternative visible emission limit during RTO bake-out shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9. Observations shall be started within 20 to 30 minutes after the end of the warm-up cycle and shall be conducted for at least 18 consecutive minutes.

During all operating times, Godfrey shall continuously operate, record data, and maintain records from the following parameter monitors:

(i) Secondary voltage for WESPs #1 and #2;
(ii) Secondary current for WESPs #1 and #2; and
(iii)Liquid flow rate for WESPs #1 and #2.

c. Sulfur Dioxide (SO_2)

Emissions of SO_2 from Furnaces/Dryers #1 and #2 are attributable to the oxidation of sulfur compounds contained in the fuel.

(1) Identify Potential Control Options

Potential pollution control options to reduce SO_2 emissions include flue gas desulfurization by means of wet scrubbing and firing fuels with an inherently low sulfur content.

Flue Gas Desulfurization
Flue gas desulfurization by means of wet scrubbing works by injecting a caustic solution into the scrubber unit to react with the SO_2 in the flue gas to form a precipitate and either carbon dioxide or water.

Low-sulfur Fuel
Firing an inherently low-sulfur fuel, such as biomass, minimizes emissions of SO_2 by preventing it from being created during combustion.

(2) Eliminate Infeasible Control Options

A search of the RBLC did not identify any post-combustion SO_2 control technologies in use on similar equipment.

Godfrey proposes to fire biomass in the furnaces, an inherently low-sulfur fuel. Operation of a wet scrubber is very energy intensive due to the pressure differential created. Additionally, wet scrubbers require significant water consumption and produce a waste stream that must be disposed of. Therefore, the use of flue gas desulfurization for control of limited SO_2 emissions is determined not to be feasible based on the adverse environmental trade-offs and intensive energy requirements.

(3) Ranking of Control Options

The firing of low-sulfur fuels (biomass) is determined to be the only control option that is feasible for control of SO_2 from Furnaces/Dryers #1 and #2. Godfrey proposes to fire only biomass in the furnaces as BACT.

(4) Determination

The Department finds the firing of biomass in the furnaces and an emission limit of 5.51 lb/hr to represent BACT for SO_2 emissions from Furnaces/Dryers #1 and #2. This emission limit applies at all times.

(5) Compliance and Monitoring

Compliance with the SO_2 limits shall be demonstrated through stack testing conducted upon request by the Department.

d. Nitrogen Oxides (NO_x)

NO_x from combustion is generated through one of three mechanisms: fuel NO_x, thermal NO_x, and prompt NO_x. Fuel NO_x is produced by the oxidation of nitrogen in the fuel source, with low nitrogen content fuels producing less NO_x than fuels with higher levels of fuel-bound nitrogen. Thermal NO_x forms in the high temperature area of the combustor and increases exponentially with increases in flame temperature and linearly with increases in residence time. Flame temperature is dependent upon the ratio of fuel burned in a flame to the amount of fuel needed to consume all the available oxygen, also known as the equivalence ratio. The lower this ratio is, the lower the flame temperature; thus, by maintaining a low fuel ratio (lean combustion), the potential for NO_x formation can be reduced. Prompt NO_x forms from the oxidation of hydrocarbon radicals near the combustion flame and produces an insignificant amount of NO_x.

(1) Identify Potential Control Options

Potential control technologies considered include add-on controls, such as selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) and the use of combustion control techniques, such as water/steam injection, flue gas recirculation (FGR), and Low NO_x Burners (LNBs).

<u>SCR</u>
SCR employs the reaction of NO_x with ammonia (NH_3) or urea in the presence of a catalyst to produce nitrogen and water, according to the following reactions:

$4NO + 4NH_3 + O_2 \rightarrow 4N_2 + 6H_2O$
$2NO_2 + 4NH_3 + O_2 \rightarrow 3N_2 + 6H_2O$

The reduction is considered “selective” because the catalyst selectively targets NO_x reduction in the presence of ammonia within a temperature range of approximately 480 ºF to 800 ºF.

<u>SNCR</u>
SNCR is a method of post combustion control that selectively reduces NO_x into nitrogen and water vapor by reacting the exhaust gas with a reagent such as ammonia or urea, similar to SCR. However, in SNCR, a catalyst is not used to

lower the activation temperature of the NO_x reduction reaction. Therefore, SNCR is used when flue gas temperatures are between 1,600 ºF and 2,100 ºF.

The reagent solution (either ammonia or urea) is typically injected along the post-combustion section of the emissions unit. Injection sites must be optimized for reagent effectiveness and must balance residence time with flue gas stream temperature. The potential for unreacted ammonia emissions (ammonia slip) is greater with SNCR than with SCR, and the overall NO_x reduction is less.

The NO_x reduction efficiency decreases rapidly at temperatures outside the optimum temperature window which results in excessive unreacted ammonia slip and increased NO_x emissions. This temperature window is higher than the exhaust gas temperature from the Combustion Turbine and HRSG and would require additional burners to raise the exhaust to the required temperature range.

Water/Steam Injections
Water/steam injection is the process of injecting water or steam into the combustion chamber to cool the combustion process and lower the peak flame temperature, thus reducing thermal NO_x. It is an effective control technique most often used in combination with SCR to achieve low emission rates.

FGR
FGR is a combustion design technique used to reduce the temperature of combustion, thereby reducing thermal NO_x formation. A portion of the exhaust gases from the furnace is extracted and reintroduced into the combustion area. The recycled flue gas consists of combustion products which act as inert heat sinks during combustion of the fuel/air mixture. This reduces NO_x emissions by two mechanisms. Primarily, the recirculated gas acts as a diluent to reduce combustion temperatures, lowering peak flame temperatures, thus suppressing thermal NO_x. Additionally, the recirculated flue gas lowers the average oxygen concentration in the combustion zone, which lowers the oxygen available to react with the nitrogen to form NO_x.

LNBs
LNBs are designed to control fuel and air mixing at each burner in a combustion unit in order to create a larger and more branched flame, thereby reducing peak flame temperatures and reducing NO_x formation.

(2) Eliminate Infeasible Control Options

SCR
SCR systems are dependent upon the flue gas and catalyst contacting at optimum temperatures. Typically, the minimum temperature required is 475 °F to 800 °F. If this minimum temperature range is not satisfied, the reaction

kinetics decrease, and ammonia passes through the system unreacted, a condition known as "ammonia slip." Ammonia slip from an SCR system placed after the furnace and before the dryer would come into direct contact with the wood strands being dried. This could cause ammonia salts to deposit onto the wood strands, which would hinder the bond between the resin and the strands. This would be detrimental to overall OSB quality.

Additionally, SCR catalysts are sensitive to particulate matter emissions. The SCR catalyst can easily become deactivated from poisoning, fouling, plugging, and erosion. The destruction of catalyst efficiency can be minimized by placing the SCR system after the particulate matter control equipment. However, this requires the use of a low-temperature catalyst, which generally have lower NO_x destruction efficiencies. Even a low-temperature catalyst requires the exhaust stream exiting the dryers to be raised from 275 °F to 475 °F, which will require combustion of approximately 30 MMBtu/hr of additional fuel.

The capital cost to install an SCR system has been quoted by an equipment supplier at approximately $5 million per furnace/dryer line. Godfrey estimates the control cost to be approximately $39,000 per ton of NO_x reduced. This figure does not include the cost of the natural gas required to heat the exhaust stream to the required temperature. Therefore, the use of an SCR system for control of NO_x emissions from the furnaces and dryers is determined not to be economically feasible.

In addition, use of an SCR system would have negative environmental and energy impacts, including emissions of additional pollutants from the combustion of additional fuel, hazards associated with the storage and use of the hazardous reagents, and adsorption of ammonia slip into the fly ash which can affect disposal or reuse of the ash.

SNCR

SNCR requires a minimum temperature of 1,600 °F. Similar to SCR, if this minimum temperature is not satisfied, ammonia slip will come into contact with the wood strands being dried, which would be detrimental to overall OSB quality.

The SNCR system cannot be placed after the dryers because the dryer exhaust will be approximately 275 °F. Reheating the gas stream to 1,600 °F would almost double the facility's fuel consumption and create almost as much NO_x as it would destroy. Therefore, the use of an SNCR system for control of NO_x emissions from the furnaces and dryers is determined not to be technically feasible.

Water/Steam Injections

Water/steam injection is only effective when used within the combustion chamber of the furnace. Introducing water or steam into the system prior to the exhaust gases passing through the rotary dryers would negate the drying functionality of the dryers. Therefore, the use of water/steam injection for control of NO_x emissions from the furnaces and dryers is determined not to be technically feasible.

LNBs

LNBs are used with liquid or gaseous fuels to develop optimum fuel/air mixing at the burners. Solid fuel combustors, such as biomass combustors, do not utilize burners. Therefore, the use of LNBs for control of NO_x emissions from the furnaces and dryers is determined not to be technically feasible.

(3) Ranking of Control Options

The use of FGR is determined to be the only control option that is feasible for control of NO_x from Furnaces/Dryers #1 and #2. Godfrey has proposed the use of FGR and an emission limit of 1.13 lb/ODT as BACT for emissions of NO_x. This limit is comparable with emission limits for similar projects identified in the RBLC.

(4) Determination

The Department finds the use of FGR and the following emission limits to represent BACT for emissions of NO_x from Furnaces/Dryers #1 and #2 (each):

Units	**NO_x**
lb/ODT	1.13
lb/hr	45.23

These limits apply at all times except during safety-related shutdowns and commissioning as described later in this license.

(5) Compliance and Monitoring

Compliance with the NO_x limits shall be demonstrated through use of a Continuous Emissions Monitoring System (CEMS) operated pursuant to *Source Surveillance – Emissions Monitoring*, 06-096 C.M.R. ch. 117.

e. Carbon Monoxide (CO)

Emissions of CO from Furnaces/Dryers #1 and #2 result from the incomplete combustion of the fuel. Incomplete combustion can occur when there is insufficient

oxygen available in the combustion zone or when there is insufficient residence time. Emissions of CO can be minimized by maintaining optimum air-to-fuel ratios and by proper combustion design to ensure adequate residence time.

(1) Identify Potential Control Options

Potential post-combustion control technologies for CO considered include oxidation catalysts and thermal oxidizers.

Oxidation Catalysts
In the presence of a catalyst, CO will react with oxygen present in the exhaust stream converting CO to carbon dioxide. No supplementary reactant is used in conjunction with an oxidation catalyst. Catalysts are typically based on a noble metal and operate by decreasing the temperature at which oxidation will occur. The catalyst lowers the activation energy necessary for CO to react with available oxygen.

Thermal Oxidizers
A thermal oxidizer raises the temperature of the exhaust stream to oxidize (burn) or pyrolyze (thermally break down) the constituents. In the case of CO, complete combustion produces carbon dioxide and water. Regenerative thermal oxidizers (RTOs) use heat exchangers to preheat the exhaust and/or recover waste heat from the treated air stream.

(2) Eliminate Infeasible Control Options

Oxidation Catalysts
Oxidation catalysts rely on surface area and catalyst activity to control emissions of CO. Because the surface area is made up of very small pores, oxidation catalysts are very sensitive to particulate contamination from combustion exhaust gases. Additionally, the high alkalinity of the wood ash particles can significantly inhibit catalyst performance. Therefore, the use of an oxidation catalyst is determined not to be technically feasible for control of CO from the furnaces and dryers.

(3) Ranking of Control Options

The use of thermal oxidation in the form of an RTO is determined to be the only post combustion control option that is feasible for control of CO from Furnaces/Dryers #1 and #2. RTOs have an estimated control efficiency of 95% for destruction of CO. Godfrey has proposed an emission limit of 0.69 lb/ODT as BACT for emissions of CO. This limit is comparable with emission limits for similar projects identified in the RBLC.

(4) Determination

The Department finds the use of an RTO and the following emission limits to represent BACT for emissions of CO from Furnaces/Dryers #1 and #2 (each):

Units	CO
lb/ODT	0.69
lb/hr	27.50

These limits apply at all times except during safety-related shutdowns and commissioning as described later in this license.

(5) Compliance and Monitoring

Compliance with the CO limits shall be demonstrated through performance testing conducted within 180 days of initial startup.

f. Greenhouse Gases (GHG)

Emissions of GHG from Furnaces/Dryers #1 and #2 result primarily from the combustion of wood fuel in the furnaces. The use of biogenic fuels, such as biomass, is considered inherently lower emitting for GHG because, unlike non-biogenic sources, emissions of biogenic GHG is regarded as part of the natural carbon cycle. In addition, trees are the primary feedstock for the OSB process, and carbon can be sequestered in the final product for long periods of time.

Therefore, the Department finds the use of biomass as the primary fuel to represent BACT for GHG from Furnaces/Dryers #1 and #2.

2. State Rules

a. 06-096 C.M.R. ch. 101, *Visible Emissions Regulation*

Stack #1 is subject to visible emissions standards pursuant to 06-096 C.M.R. ch. 101, §§ 4(A)(8), 4(D), and 5.

The Department has determined that the BACT limits for visible emissions are more stringent than the applicable standards in 06-096 C.M.R. ch. 101. Therefore, the visible emissions standards have been streamlined to the more stringent BACT limits, and only these more stringent limits shall be included in the Order section of this air emission license.

b. 06-096 C.M.R. ch. 103, *Fuel Burning Equipment Particulate Emission Standard*

Furnaces #1 and #2 shall each not exceed a particulate matter emission limit of 0.08 lb/MMBtu/hr. [06-096 C.M.R. ch. 103, § 2(B)(4)(b)]

The Department has determined that the BACT limits for particulate matter are more stringent than the applicable standard in 06-096 C.M.R. ch. 103. Therefore, the particulate matter limits have been streamlined to the more stringent BACT limits, and only these more stringent limits shall be included in the Order section of this air emission license.

c. 06-096 C.M.R. ch. 105, *General Process Source Particulate Emission Standard*

Dryers #1 and #2 shall each not exceed a particulate matter emission limit of 31.19 lb/hr. [06-096 C.M.R. ch. 105, § 3]

The Department has determined that the BACT limits for particulate matter are more stringent than the applicable standard in 06-096 C.M.R. ch. 105. Therefore, the particulate matter limits have been streamlined to the more stringent BACT limits, and only these more stringent limits shall be included in the Order section of this air emission license.

d. 06-096 C.M.R. ch. 117, *Source Surveillance – Emissions Monitoring*

A Continuous Opacity Monitoring System (COMS) is required on the exhausts of Furnaces #1 and #2. [06-096 C.M.R. ch. 117, § 1(B)(1)] Godfrey is proposing to install either a COMS or an ESP predictive model to monitor the performance of the WESP as allowed by 40 C.F.R. § 60.48b(j)(6). The Department may approve the use of an ESP predictive model on a case-by-case basis as outlined in 06-096 C.M.R. ch. 117, § 1(C).

The Department finds that there are physical and operational constraints (e.g., a wet plume) that may make operation of a COMS after the WESP difficult, and use of an ESP predictive model is a reasonable alternative. Therefore, for monitoring the exhausts of Furnaces #1 and #2, Godfrey shall install, operate, and maintain on the exhausts of Furnaces #1 and #2 either a COMS pursuant to the requirements of 06-096 C.M.R. ch. 117 or an ESP predictive model pursuant to the requirements of 40 C.F.R. Part 60, Subpart Db.

Godfrey shall continuously monitor for NO_x on each exhaust of Furnaces #1 and #2 using a CEMS. [06-096 C.M.R. ch. 117, 1(B)(2)]

3. New Source Performance Standards (NSPS)

New Source Performance Standards titled *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units,* 40 C.F.R. Part 60, Subpart Db, applies to steam generating units that commence construction, modification, or reconstruction after June 19, 1984, and have a heat input capacity greater than 100 MMBtu/hr.

The definition of steam generating unit in 40 C.F.R. Part 60, Subpart Db states:

Steam generating unit means a device that combusts any fuel or byproduct/waste and produces steam or heats water or heats any heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

A process heater is defined as:

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

A portion of each furnace's exhaust is routed to its own dedicated thermal oil system consisting of a thermal oil heater (TOHs #1 and #2). Each TOH transfers heat to a thermal oil which is considered a heat transfer medium. As such, the furnaces meet the definition of a steam generating unit and are subject to the requirements of 40 C.F.R. Part 60, Subpart Db.

Following is a summary of the applicable requirements in 40 C.F.R. Part 60, Subpart Db.

a. Standards

(1) Furnaces #1 and #2 shall each not exceed a PM emission limit of 0.030 lb/MMBtu. This standard applies at all times except for periods of startup, shutdown, and malfunction [40 C.F.R. §§ 60.43b(g), 60.43b(h)(1), and 60.46b(a)]

(2) Visible emissions from Stack #1 shall not exceed 20% opacity on a 6-minute block average, except for one 6-minute block average per hour of not more than 27% opacity. This standard applies at all times except for periods of startup, shutdown, and malfunction. [40 C.F.R. §§ 60.43b(g), 60.43b(f), and 60.46b(a)]

If Godfrey elects to monitor emissions by operating a PM CEMS, the visible emissions standard above does not apply. [40 C.F.R. § 60.43b(f)

The Department has determined that the BACT limits for visible emissions are more stringent than the applicable standards in 40 C.F.R. Part 60, Subpart Db. Therefore, the visible emissions standards have been streamlined to the more stringent BACT limits, and only these more stringent limits shall be included in the Order section of this air emission license.

b. Testing Requirements

(1) Particulate Matter

(i) Godfrey shall conduct initial performance testing on Furnaces #1 and #2 (each) to demonstrate compliance with the PM lb/MMBtu emission limit within 60 days of achieving maximum production but not later than 180 days after initial startup. Subsequent performance tests shall be conducted upon request by the Department. [40 C.F.R. §§ 60.8 and 60.46b(d)]

(ii) Godfrey shall conduct performance testing either by using 40 C.F.R. Part 60, Appendix A, Method 5 (or other method approved by the Department) or by installing, calibrating, maintaining, and operating a CEMS for monitoring PM emissions (PM CEMS). [40 C.F.R. §§ 60.46b(d) and 60.46b(j)]

(iii) If Godfrey elects to monitor emissions by operating a PM CEMS, Godfrey shall comply with the requirements of 40 C.F.R. § 60.46b(j)(1) through (14). [40 C.F.R. § 60.46b(j)]

(2) Visible Emissions

If Godfrey elects to monitor emissions by operating a PM CEMS, the visible emissions standard in 40 C.F.R. § 60.43b(f) as described above does not apply. If a PM CEMS is not operated, Godfrey is subject to the following requirements.

(i) Godfrey shall conduct initial performance testing on Stack #1 for Furnace #1 and Furnace #2 (each) to demonstrate compliance with the visible emissions limit within 60 days of achieving maximum production but not later than 180 days after initial startup. [40 C.F.R. §§ 60.8 and 60.46b(d)]

(ii) Godfrey shall conduct performance testing using 40 C.F.R. Part 60, Appendix A, Method 9. [40 C.F.R. § 60.46b(d)(7)]

(iii) If Godfrey elects to monitor emissions from Furnaces #1 and #2 by operating a COMS, subsequent performance tests shall be conducted upon request by the Department. [40 C.F.R. § 60.46b(d)]

(iv) If Godfrey elects to monitor emissions from Furnaces #1 and #2 by operating an ESP predictive model, subsequent performance tests for visible emissions shall be conducted in accordance with the schedules in 40 C.F.R. §§ 60.48b(a)(1), (2), or (3), as applicable. For subsequent performance tests, the observation period may be reduced from three hours to 60 minutes if all 6-minute averages are less than 10% opacity and all individual 15-second observations are less than or equal to 20% opacity during the initial 60 minutes of observations. [40 C.F.R. § 60.48b(a)]

c. Monitoring Requirements

(1) Pursuant to 40 C.F.R. § 60.48b(a), Godfrey shall install, calibrate, maintain, and operate one of the following and record the output of the system.

(i) A COMS on Stack #1; [40 C.F.R. § 60.48b(a)]
<u>or</u>
(ii) A PM CEMS for each furnace/dryer exhaust stream; [40 C.F.R. § 60.48b(j)(1)]
<u>or</u>
(iii) An ESP predictive model for each furnace/dryer exhaust stream operated in accordance with 40 C.F.R. § 60.48Da(o)(3). [40 C.F.R. § 60.48b(j)(6)]

(2) If Godfrey elects to monitor emissions by operating a COMS, the span value for the COMS shall be between 60 and 80 percent. [40 C.F.R. § 60.48b(e)(1)]

(3) If Godfrey elects to monitor emissions by operating a PM CEMS, the PM CEMS shall be operated and data recorded during all periods of operation except for CEMS breakdowns and repairs. Data must be recorded during calibration checks and zero span adjustments. [40 C.F.R. § 60.48b(k)]

d. Recordkeeping

(1) Godfrey shall maintain records of the amounts of fuel combusted in each furnace during each calendar month. [40 C.F.R. § 60.49b(d)(2)]

(2) If Godfrey elects to monitor emissions by using either a COMS or an ESP predictive model, Godfrey shall maintain records of opacity. [40 C.F.R. § 60.49b(f)]

(3) If Godfrey elects to monitor emissions by operating a COMS, Godfrey shall maintain the records specified in 40 C.F.R. § 60.49b(f)(1) through (3). [40 C.F.R. § 60.49b(f)]

(4) All records required by 40 C.F.R. Part 60, Subpart Db shall be maintained for a period of 2 years following the date of the record. [40 C.F.R. § 60.49b(o)]

Note: Standard Condition (8) requires records to be maintained for a minimum of six years.

e. Notifications and Reporting

(1) Godfrey shall submit notification to the Department and EPA of the date of initial startup. The notification shall include:

(i) The design heat input capacity of each furnace and identification of the fuel to be fired; and
(ii) The annual capacity factor at which Godfrey anticipates operating the facility.
[40 C.F.R. § 60.49b(a)]

(2) Godfrey shall submit to the Department and EPA results of the initial performance tests and the performance evaluation of the PM CEMS, as applicable. [40 C.F.R. § 60.49b(b)]

(3) If Godfrey elects to monitor emissions by using either a COMS or an ESP predictive model, Godfrey shall submit excess emission reports for any excess emissions that occurred during the reporting period. Excess emissions are defined as all 6-minute periods during which the average opacity exceeds the standard. [40 C.F.R. § 60.49b(h)]

The reporting period for excess emission reports is each six-month period (i.e., semiannually). All reports shall be submitted to EPA and to the Department and shall be postmarked by the 30th day following the end of the reporting period. [40 C.F.R. § 60.49b(w)]

(4) Godfrey may submit electronic quarterly reports in lieu of written semiannual reports. The format of the quarterly electronic report shall be coordinated with the Department. Any electronic report shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification

statement indicating whether compliance with the applicable emission standards and minimum data requirements was achieved during the reporting period. Before submitting reports using an electronic format, Godfrey shall coordinate with the Department to obtain agreement to submit reports in this alternative format. [40 C.F.R. § 60.49b(v)]

4. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Emissions from Furnaces/Dryers #1 and #2 are not subject to the *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,* 40 C.F.R. Part 63, Subpart DDDDD. The term "process heater," as defined in Subpart DDDDD, excludes devices in which the combustion gases come into direct contact with process materials, such as with Furnaces/Dryers #1 and #2.

Godfrey is subject to *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* 40 C.F.R. Part 63, Subpart DDDD. For this regulation, "affected source" is defined in § 63.2232(b) to include Dryers #1 and #2. The applicable requirements of Subpart DDDD are addressed in Section II(I) of this license.

D. TOHs #1 & #2 and TOS Backup Heater

A portion of each furnace's exhaust gas is routed to the Thermal Oil Heating System. These exhaust gases come off of the upper chamber of each furnace. The Thermal Oil Heating System consists of two thermal oil heaters (TOHs #1 and #2) that are indirect contact heat exchangers that produce hot oil used to provide heat to Press #1, the log conditioning ponds, wax systems, and for general facility heating. TOHs #1 and #2 are each designed to collect up to 158 MMBtu/hr of thermal energy. After being used in the TOH, the furnace exhaust gases pass through a multicyclone before being returned to the furnace via a mix chamber downstream of the upper furnace.

All of the flue gases from the furnaces that are routed to TOHs #1 and #2 are returned to the respective furnace except in emergency situations, as described in Section II(B) of this license, where use of an emergency bypass stack may be triggered. Therefore, there are no emissions from TOHs #1 and #2 that are not already accounted for in Section II(B) except as described below.

One of the thermal oil heaters (i.e., either TOH #1 or #2) will be equipped with a burner referred to as the TOS Backup Heater. The TOS Backup Heater consists of a single burner that will not exceed a maximum heat input of 50 MMBtu/hr that fires natural gas and exhausts through its own stack (Stack #3). The TOS Backup Heater will be operated when the furnaces are either down or are not making enough heat to meet the demands of the

Thermal Oil Heating System. As such, Godfrey has proposed limiting the TOS Backup Heater's hours of operation to 500 hours per year.

1. BACT Findings

Godfrey submitted a BACT analysis for control of emissions from the TOS Backup Heater. Following is a summary of that analysis.

a. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

Godfrey has proposed to burn only low-ash content fuel (natural gas) in the TOS Backup Heater. Additional add-on pollution controls are not economically feasible.

The Department finds the use of natural gas as a fuel, an annual operating limit of 500 hr/year on a 12-month rolling total basis, and the emission limits in the table below to represent BACT for particulate matter emissions from the TOS Backup Heater.

b. Sulfur Dioxide (SO_2)

Godfrey has proposed to fire only natural gas, an inherently low-sulfur fuel. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible.

The Department finds the use of natural gas as a fuel, an annual operating limit of 500 hr/year on a 12-month rolling total basis, and the emission limit in the table below to represent BACT for SO_2 emissions from the TOS Backup Heater.

c. Nitrogen Oxides (NO_x)

The TOS Backup Heater will be equipped with a low-NO_x burner (LNB) which minimizes the formation of NO_x by improving fuel/air mixing. The use of add-on control technologies for a natural gas-fired unit of this size is not economically feasible.

The Department finds the use of natural gas as a fuel, use of a LNB, an annual operating limit of 500 hr/year on a 12-month rolling total basis, and the emission limit in the table below to represent BACT for NO_x emissions from the TOS Backup Heater.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

Emissions of CO and VOC can be reduced by using oxidation catalysts or thermal oxidizers. Oxidation catalysts and thermal oxidizers both have high capital,

maintenance, and operational costs considering the size of the emission unit in question. These controls were determined to not be economically feasible.

The Department finds the use of use of natural gas as a fuel, an annual operating limit of 500 hr/year on a 12-month rolling total basis, and the emission limits in the table below to represent BACT for CO and VOC emissions from the TOS Backup Heater.

e. Emission Limits

The BACT emission limits for the TOS Backup Heater are the following:

Unit	Pollutant	lb/MMBtu
TOS Backup Heater	PM	0.05

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
TOS Backup Heater	2.50	2.50	2.50	0.03	2.45	4.12	0.27

Visible emissions from the TOS Backup Heater shall not exceed 10% opacity on a 6-minute block average basis.

Godfrey shall demonstrate compliance with the emission limits above through performance testing upon request of the Department.

2. State Rules

a. 06-096 C.M.R. ch. 101, *Visible Emissions Regulation*

Stack #3 is subject to a visible emissions standard pursuant to 06-096 C.M.R. ch. 101, § 4(A)(3) that is equivalent to the BACT determined visible emissions limit for the TOS Backup Heater.

b. 06-096 C.M.R. ch. 103, *Fuel Burning Equipment Particulate Emission Standard*

The TOS Backup Heater shall not exceed a particulate matter emission limit of 0.08 lb/MMBtu/hr. [06-096 C.M.R. ch. 103, § 2(B)(4)(b)]

The Department has determined that the BACT limit for particulate matter is more stringent than the applicable standard in 06-096 C.M.R. ch. 103. Therefore, the particulate matter limit has been streamlined to the more stringent BACT limit, and

only this more stringent limit shall be included in the Order section of this air emission license.

3. New Source Performance Standards (NSPS)

   Due to its size, the TOS Backup Heater is subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

   Godfrey shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to the TOS Backup Heater including, but not limited to, the following:

   a. Godfrey shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up of the TOS Backup Heater. This notification shall include the unit's design heat input capacity and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]

   b. Godfrey shall maintain records of the amounts of natural gas combusted in the TOS Backup Heater during each calendar month. [40 C.F.R. § 60.48c(g)]

4. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   The TOS Backup Heater is subject to *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,* 40 C.F.R. Part 63, Subpart DDDDD. The TOS Backup Heater will be subject to a federally enforceable limit restricting operation to no more than 500 hr/year, which results in an annual capacity factor of less than 10%. Therefore, the TOS Backup Heater is considered a new unit in the "limited-use process heater" subcategory. Should Godfrey amend this license in the future to remove the 500 hr/year operation restriction, Godfrey must provide EPA notice within 15 days of such change in accordance with 40 C.F.R. § 63.9(j).

   Pursuant to 40 C.F.R. § 63.1(c)(6)(iii), the TOS Backup Heater will remain subject to the applicable requirements of 40 C.F.R. Part 63, Subpart DDDDD, even if the facility becomes an area source by reducing both its actual emissions and potential to emit hazardous air pollutants to below major source thresholds.

   Limited-use process heaters are not subject to the emission limits in Tables 1 and 2, or Tables 11 through 15, or the operating limits in Table 4. [40 C.F.R. § 63.7500(c)]

   Fuel analyses are not required for units that fire a single type of fuel.
   [40 C.F.R. § 63.7510(a)(2)(i)]

Godfrey shall comply with all requirements of 40 C.F.R. Part 63, Subpart DDDDD applicable to the TOS Backup Heater including, but not limited to, the following:

a. Continuous Compliance

At all times, Godfrey must operate and maintain the TOS Backup Heater, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 C.F.R. § 63.7500(a)(3)]

b. Work Practice Standards

(1) Godfrey shall perform tune-ups every five years on the TOS Backup Heater as specified in §§ 63.7540(a)(10)(i) through (vi). The first tune-up shall be conducted no later than 61 months from initial startup. Each subsequent tune-up shall be conducted no more than 61 months after the previous tune-up. The burner inspection specified in § 63.7540(a)(10)(i) may be delayed until the next scheduled or unscheduled unit shutdown, but Godfrey must inspect the burner at least once every 72 months. [40 C.F.R. §§ 63.7515(d), 63.7540(a)(12), and Table 3, Row 1]

(2) If the TOS Backup Heater is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 C.F.R. § 63.7540(a)(13)]

c. Recordkeeping

(1) Godfrey shall keep fuel use records for the days the TOS Backup Heater operates. [40 C.F.R. § 63.7525(k)]

(2) Records shall be kept for a period of five years. [40 C.F.R. § 63.7560(b)]

Note: All records must be kept for a period of six years pursuant to Standard Condition (8).

(3) Records shall be kept on-site, or be accessible from on-site, for at least two years. Records may be kept off site for the remaining years.
[40 C.F.R. § 63.7560(c)]

d. Reports

(1) Godfrey shall submit compliance reports that contain the information in 40 C.F.R. §§ 63.7550(c)(5)(i) through (iv), (xiv), and (xvii) every five years. [40 C.F.R. §§ 63.7550(a) and (b) and Table 9, Row 1]

(2) The compliance report must be postmarked no later than January 31st of the year following the applicable five-year period covered by the report. [40 C.F.R. § 63.7550(b)]

E. Screening, Blending, and Forming

Following the dryers, the wood strands are screened and sorted into dry bins based on their size (intermediate, face, or core) before being sent to the blenders.

The dry strands are blended with phenol-formaldehyde (PF) and polymeric methylene diphenyl diisocyanate (pMDI) resins and an emulsified wax. Godfrey proposes installing four blending drums, one each for intermediate, face, and core strands and one capable of processing any strand size. Resins and wax will be added to the blenders through atomizers to enhance the adhesion of resin and wax on the surfaces of the strands.

The coated strands are metered out and mechanically oriented onto a continuous moving screen system. The strands are placed so that strands for the top and core surfaces of the panel are aligned in one direction and the interior strands in the opposite direction to build a "mat."

1. BACT Findings

Godfrey submitted a BACT analysis for control of emissions from the screening, blending, and forming processes. Following is a summary of that analysis.

a. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

Dust is collected from various pick-up points in the screening, blending, forming, and conveying area. Godfrey proposes to control emissions of particulate matter through use of two dust collection systems, a Dry Dust Collection System and a Resonated Dust Collection System, both of which consist of material separation cyclones followed by baghouse or cartridge filter systems.

A review of similar projects in the RBLC did not identify any control technology for particulate matter other than a baghouse or similar cartridge filtration system. Other technically feasible options include use of an ESP or high efficiency cyclones. Because this exhaust stream does not have a high moisture content nor

the sticky nature of other process exhaust streams, the use of a baghouse has the highest control efficiency of the technically feasible options at greater than 99%.

The Department finds the use of material separation cyclones followed by a baghouse or cartridge filter system designed to have a greater than 99% control efficiency and an emission limit of 0.02 lb/hr to represent BACT for particulate matter emissions from the Dry Dust Collection System and Resonated Dust Collection System.

Visible emissions from each baghouse shall not exceed 10% opacity on a 6-minute block average basis.

Compliance with the particulate matter emission limit and the visible emissions limit shall be demonstrated through performance testing conducted upon request by the Department.

b. Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)

Emissions of VOC and HAP can be emitted from the dry wood strands, which are still warm after exiting the dryer, and the resins that have been blended with them. The HAP emitted are primarily acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. Emissions of VOC and HAP from the screening, blending, and forming operations are dilute in nature.

(1) Identify Potential Control Options

Potential control technologies considered for control of VOC and HAP include catalytic or thermal oxidation, condensation, and adsorption.

(2) Eliminate Infeasible Control Options

The unit operations involved are not conducive to a total enclosure system. Any add-on control technology used would not be able to achieve a high level of capture efficiency, which results in an increased control cost per ton of pollutant removed.

<u>Catalytic and Thermal Oxidation</u>
The amount of fuel required to heat the exhaust stream's large volume to the temperatures required for catalytic or thermal oxidation would offset any environmental benefits achieved from the control of the VOC and HAP. Therefore, the use of catalytic or thermal oxidation are determined not to be technically feasible for control of VOC and HAP from the screening, blending, and forming operations.

Condensation and Adsorption

Condensers and adsorbers do not function efficiently on exhaust streams that are dilute and which have variable species of VOC. Therefore, the use of condensers and adsorbers are determined not to be technically feasible for control of VOC and HAP from the screening, blending, and forming operations.

(3) Determination

The Department finds there are no add-on control options that are either technologically or economically feasible for control of VOC and HAP from the screening, blending, and forming operations. The Department has determined that BACT for control of VOC and HAP from the screening, blending, and forming operations is compliance with the applicable requirements contained in *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* 40 C.F.R. Part 63, Subpart DDDD, as described in Section II(I) below.

Uncontrolled emissions of VOC and HAP from these operations are calculated to be 102.9 tpy and 72.4 tpy, respectively, based on the maximum production rate through the dryers of 40 ODT/hr each and emission factors from the National Council for Air and Stream Improvement (NCASI)[1].

2. State Rules

a. 06-096 C.M.R. ch. 101, *Visible Emissions Regulation*

Exhausts from the Dry Dust Collection System and Resonated Dust Collection System baghouses are subject to a visible emissions standard pursuant to 06-096 C.M.R. ch. 101, §§ 4(B)(3) that is equivalent to the BACT visible emissions limit for this equipment.

b. 06-096 C.M.R. ch. 105, *General Process Source Particulate Emission Standard*

Exhausts from the Dry Dust Collection System and Resonated Dust Collection System baghouses are subject to a particulate matter emission limit pursuant to 06-096 C.M.R. ch. 105, § 3.

The Department has determined that the BACT limit for particulate matter is more stringent than the applicable standard in 06-096 C.M.R. ch. 105. Therefore, the particulate matter limits have been streamlined to the more stringent BACT limit,

[1] NCASI Handbook of Environmental Regulations and Control, Volume 2: Wood Products Manufacturing (March 2013) Table 4.6.1-1.

and only this more stringent limit shall be included in the Order section of this air emission license.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Blenders and formers are included in the "affected source" as defined by 40 C.F.R. Part 63, Subpart DDDD, § 63.2232(b). Requirements of Subpart DDDD are addressed in Section II(I) of this license.

F. Press #1

Press #1 is a single mat continuous press. It applies heat and pressure to the mat of resonated strands. This consolidates the strands and cures the resin, creating a solid panel. Heat for the press is provided by thermal oil supplied by the Thermal Oil Heating System.

Heating the strands under pressure in the press releases water vapor as well as VOC and HAP from the organic compounds in the wood and volatile components of the resin that do not otherwise set as part of the process.

Press #1 has multiple exhaust pick-up points and hoods designed to collect gases released by the process. This system will meet the definition of "wood products enclosure" in 40 C.F.R. § 63.2292 or will meet a capture efficiency of 95%.

As described below, Godfrey has proposed the use of a wet scrubber followed by an RTO for control of emissions from Press #1. The RTO exhausts through Stack #2, which has a minimum height of 150 feet above ground level.

1. BACT Findings

Godfrey submitted a BACT analysis for control of emissions from Press #1. Following is a summary of that analysis.

a. Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)

The primary pollutant of concern from Press #1 are VOC (many of which are HAP) which is emitted when the heat and pressure in the press activates the resin which bonds the product together.

(1) Identify Potential Control Options

Potential add-on control technologies for VOC and HAP considered include adsorption systems, biofiltration, condensation systems, and thermal or catalytic oxidation. A description of the operation of each of these control types is included in Section II(C)(1) of this air emission license.

(2) Eliminate Infeasible Control Options

Adsorption Systems
The exhaust stream from the press contains a variety of VOC and HAP which are likely to change depending on the wood species being processed. This makes the design of an adsorbent system difficult. Furthermore, the moisture present in the exhaust stream can significantly hinder the pollutant adsorbent efficiency and can also promote biological growth on the adsorbent surface. Adsorption systems are not considered a proven technology for this type of application and has been determined not to be technically feasible for control of VOC and HAP from Press #1.

Condensers
Condensers are most often used for high concentration exhaust streams. Recovery efficiencies greater than 95% can be achieved for exhaust streams with concentrations of 5,000 – 10,000 ppmv or greater. Recovery efficiencies are significantly less for exhaust streams with lower concentrations.

Because the exhaust from Press #1 is expected to have VOC and HAP concentrations significantly below 5,000 ppmv, the use of a condensation system is determined to not be technically feasible for control of VOC and HAP from Press #1.

(3) Ranking of Control Options

The remaining control options considered have the following efficiencies for control of VOC.

Technology	Control Efficiency
RTO/RCO	95%
Biofiltration	60-90%

Godfrey has proposed the use of an RTO (RTO #3) on the exhaust stream from Press #1. This represents the highest level of control. Godfrey has proposed emission limits of 0.066 lb/$MSF_{3/8}$ and 10.56 lb/hr as BACT for emissions of VOC.

(4) Determination

The Department finds BACT for emissions of HAP to be the use of an RTO and compliance with *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* 40 C.F.R. Part 63, Subpart DDDD, as described in Section II(I) below.

The Department finds the use of an RTO and the following emission limits to represent BACT for emissions of VOC from Press #1:

Units	VOC
lb/$MSF_{3/8}$	0.066
lb/hr	10.56

These limits apply at all times except during safety-related shutdowns and commissioning as described later in this license.

(5) Compliance and Monitoring

Compliance with the VOC limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every five calendar years thereafter.

Godfrey shall monitor RTO #3 pursuant to the most current version of 40 C.F.R. Part 63, Subpart DDDD.

b. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

Emissions of particulate matter from Press #1 are comprised of very fine wood material and condensable organic compounds.

(1) Identify Potential Control Options

Potential add-on control technologies for particulate matter considered include baghouses, ESPs/WESPs, and wet scrubbers. Because a large portion of the particulate matter emissions are organic compounds, thermal oxidation was also considered. A description of the operation of each of these control types is included in Section II(B)(1) of this air emission license.

(2) Eliminate Infeasible Control Options

<u>Baghouses</u>
Baghouses are not well suited to this application due to the high moisture content and organic loading of the exhaust stream. The condensable PM produced in the press is sticky and tar-like as well as flammable as it cools and condenses. It can cause significant plugging and fouling of the bag surfaces. Therefore, baghouses are considered technologically infeasible for this application.

(3) Ranking of Control Options

The remaining control options considered have the following efficiencies for control of particulate matter.

Technology	Control Efficiency
WESP	99%
Thermal Oxidation	85%
Wet Scrubber	40-80%

Although use of a WESP has the highest control efficiency, it has undesirable environmental trade-offs including a heavy electrical load and production of a wastewater stream that would need to be treated. As described previously, use of an RTO has been selected for control of VOC and HAP emissions. Use of an RTO will also significantly reduce emissions of condensable particulate matter. Combining the use of an RTO with a wet scrubber for control of filterable particulate matter results in a control efficiency equivalent to the highest level of control. Therefore, Godfrey has proposed the use of a wet scrubber followed by an RTO as BACT on the exhaust stream from Press #1. Godfrey has proposed an emission limit of 0.063 lb/$MSF_{3/8}$ as BACT for emissions of PM, PM_{10}, and $PM_{2.5}$ (each). This limit is similar to emission limits identified in the RBLC.

(4) Determination

The Department finds the use of a wet scrubber followed by an RTO and the following emission limits to represent BACT for particulate matter emissions from Press #1:

Units	PM	PM_{10}	$PM_{2.5}$
lb/$MSF_{3/8}$	0.063	0.063	0.063
lb/hr	10.00	10.00	10.00

These limits apply at all times except during safety-related shutdowns and commissioning as described later in this license.

Visible emissions from Stack #2 shall not exceed 20% opacity on a 6-minute block average basis, except for periods of commissioning, startup, shutdown, malfunction, or RTO bake-out.

During periods of startup, shutdown, or malfunction, visible emissions from Stack #2 shall not exceed 40% opacity on a 6-minute block average basis. This alternative visible emissions standard shall not be utilized for more than two

hours (20 consecutive 6-minute block averages) per event. Godfrey shall keep records sufficient to document the date, time, and duration of each event. Compliance with the visible emissions limit during these periods shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9, upon request by the Department.

During periods of RTO bake-out, Godfrey must either meet the visible emission limits above or meet the following work practice standards and alternative visible emissions standard:

a. Godfrey shall keep records sufficient to document the date, time, and duration of each event;

b. Bake-out events shall not occur while Press #1 is operating;

c. Bake-out events (where work practice standards are utilized) shall not occur more frequently than six times per calendar year;

d. Once the RTO chamber is at temperature for bake-out to begin, the duration of each bake-out event shall not exceed three hours; and

e. During the bake-out event, visible emissions shall not exceed 60% opacity on a 6-minute block average basis.

(5) Compliance and Monitoring

Compliance with the particulate matter limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every other calendar year thereafter.

Except as noted below, compliance with the visible emissions standards shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9, upon request by the Department.

Compliance with the alternative visible emission limit during RTO bake-out shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9. Observations shall be started within 20 to 30 minutes after the end of the warm-up cycle and shall be conducted for at least 18 consecutive minutes.

During all operating times, Godfrey shall continuously operate, record data, and maintain records from the following parameter monitors:

(i) Liquid pressure for the wet scrubber; and

(ii) Liquid flow rate for the wet scrubber.

c. Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x), and Carbon Monoxide (CO)

Emissions of SO_2, NO_x, and CO from Press #1 are attributable to the combustion of natural gas and process gases in the RTO. An unquantifiable amount of these pollutants may also be released from the press itself. The firing of inherently low sulfur fuel in the RTO, such as natural gas, will minimize emissions of SO_2. No other control options for these pollutants have been identified.

The Department finds the firing of natural gas in the RTO and the following emission limits to represent BACT for emissions of SO_2, NO_x, and CO from Press #1.

Units	**SO_2**	**NO_x**	**CO**
lb/$MSF_{3/8}$	N/A	0.27	0.22
lb/hr	0.02	43.20	35.20

These limits apply at all times. Compliance shall be demonstrated through stack testing conducted upon request by the Department.

2. State Rules

a. 06-096 C.M.R. ch. 101, *Visible Emissions Regulation*

Stack #2 is subject to visible emissions standards pursuant to 06-096 C.M.R. ch. 101, §§ 4(A)(8), and 5.

The Department has determined that the BACT limits for visible emissions are more stringent than the applicable standards in 06-096 C.M.R. ch. 101. Therefore, the visible emissions standards have been streamlined to the more stringent BACT limits, and only these more stringent limits shall be included in the Order section of this air emission license.

b. 06-096 C.M.R. ch. 105, *General Process Source Particulate Emission Standard*

Press #1 is subject to a particulate matter emission limit in 06-096 C.M.R. ch. 105 that is based on the hourly rate of material processed.

The Department has determined that the BACT limits for particulate matter are more stringent than the applicable standard in 06-096 C.M.R. ch. 105. Therefore, the particulate matter limits have been streamlined to the more stringent BACT limits, and only these more stringent limits shall be included in the Order section of this air emission license.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   Presses are included in the "affected source" as defined by 40 C.F.R. Part 63, Subpart DDDD, § 63.2232(b). The applicable requirements of Subpart DDDD are addressed in Section II(I) of this license.

G. Finishing

The board leaving the press is cut and sent directly to the finishing area. Although the finished product will continue to cool naturally, Godfrey does not propose to install a "reconstituted wood product board cooler," which is defined by 40 C.F.R. § 63.2292 as a piece of equipment designed to reduce the temperature of the board by means of forced air or convection within a controlled time period after the board exits the press unloader.

In the finishing area, the board is cut to its final length and sanded, and a tongue-and-groove edge is cut. Any panels that do not meet specifications will be broken up by a "board breaker" and recycled back into the process or used for fuel. Additionally, sawdust, shavings, and sander dust may also be used as fuel and are collected at a variety of pick-up points and pneumatically conveyed to a collection/storage location.

1. BACT Findings

   Godfrey submitted a BACT analysis for control of emissions from material handling in the finishing area. Following is a summary of that analysis.

   a. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

      Godfrey proposes to control emissions of particulate matter through use of three dust collection systems, which consist of material separation cyclones followed by baghouses.

      A review of similar projects in the RBLC did not identify any control technology for particulate matter other than a baghouse or similar cartridge filtration system. The use of a baghouse has a control efficiency of greater than 99%.

      The Department finds the use of material separation cyclones followed by baghouses designed to have a greater than 99% control efficiency and an emission limit of 0.27 lb/hr (for all three baghouses combined) to represent BACT for particulate matter emissions from the Finishing Area Dust Collection System.

      Visible emissions from each baghouse shall not exceed 10% opacity on a 6-minute block average basis.

Compliance with the particulate matter emission limit and the visible emissions limit shall be demonstrated through performance testing conducted upon request by the Department.

b. Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)

Emissions of VOC and HAP can continue to be emitted from the OSB panels as they cool. A review of similar projects in the RBLC did not identify any VOC/HAP controls currently in use on finishing area emissions other than for board coolers. As described earlier, Godfrey does not propose to install a board cooler. No other technically feasible control options have been identified.

BACT for control of VOC and HAP from the finishing area material handling operations is determined to be compliance with *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* 40 C.F.R. Part 63, Subpart DDDD, as described in Section II(I) below.

Uncontrolled emissions of VOC and HAP from these operations are calculated to be 41.2 tpy and 2.0 tpy, respectively, based on the maximum production rate through Press #1 of 160 $MSF_{3/8}$/hr and emission factors from NCASI[2].

2. State Rules

a. 06-096 C.M.R. ch. 101, *Visible Emissions Regulation*

Exhausts from the Finishing Area Dust Collection System baghouses are subject to a visible emissions standard pursuant to 06-096 C.M.R. ch. 101, §§ 4(B)(3) that is equivalent to the BACT visible emissions limit for this equipment.

b. 06-096 C.M.R. ch. 105, *General Process Source Particulate Emission Standard*

Exhausts from the Finishing Area Dust Collection System baghouses are subject to a particulate matter emission limit pursuant to 06-096 C.M.R. ch. 105, § 3.

The Department has determined that the BACT limit for particulate matter is more stringent than the applicable standard in 06-096 C.M.R. ch. 105. Therefore, the particulate matter limits have been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the Order section of this air emission license.

[2] NCASI Handbook of Environmental Regulations and Control, Volume 2: Wood Products Manufacturing (March 2013) Tables 5.3.1.1-1 through 3.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   Finishing operations, such as sawing and sanding, are included in the "affected source" as defined by 40 C.F.R. Part 63, Subpart DDDD, § 63.2232(b). Requirements of Subpart DDDD are addressed in Section II(I) of this license.

H. Edge Seal Spray Booth

After finishing, the OSB boards may have edge seal material applied to the cut edges of the products to minimize the amount of moisture entering into the edge of the product. The edge seal is a water-based coating with a VOC content of less than 1% by weight. It is a non-HAP coating as defined by 40 C.F.R. § 63.2292. The Edge Seal Spray Booth will use filters on the air outlet to trap particulate matter prior to venting inside the building. Emissions of particulate matter, VOC, and HAP from the Edge Seal Spray Booth are determined to be negligible.

1. BACT Findings

   The Department finds the use of particulate filters and venting inside the building to represent BACT for particulate matter emissions from the Edge Seal Spray Booth.

   The Department finds the use of low-VOC and non-HAP coatings to represent BACT for emissions of VOC and HAP from the Edge Seal Spray Booth.

2. State Rules

   The Edge Seal Spray Booth is not subject to *Surface Coating Facilities*, 06-096 C.M.R. ch. 129. This rule has requirements for surface coating of flatwood paneling. That term does not include OSB panels as that term is defined in 06-096 C.M.R. ch. 129 and the underlying Control Technology Guideline[3] on which it was based.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   Finishing operations, including edge seal operations, are included in the "affected source" as defined by 40 C.F.R. Part 63, Subpart DDDD, § 63.2232(b). Requirements of Subpart DDDD are addressed in Section II(I) of this license.

[3] Control Technology Guidelines for Flat Wood Paneling Coatings, EPA 453/R-06-004, September 2006 found at https://www3.epa.gov/airquality/ctg_act/200609_voc_epa453_r-06-004_wood_panel_coatings.pdf

I. 40 C.F.R. Part 63, Subpart DDDD

Godfrey is subject to *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* 40 C.F.R. Part 63, Subpart DDDD. Godfrey is a plywood and composite wood products manufacturing facility which is a major source of HAP. The affected source under Subpart DDDD includes, but is not limited to the green end operations, resin preparation, dryers, blenders, formers, press, and finishing operations.

The dryers meet the definition of "green rotary dryers."

The definition of "reconstituted wood product press" includes units that produce hardboard, medium density fiberboard, particleboard, and oriented strandboard. Therefore, Press #1 is considered a reconstituted wood product press.

The Edge Seal Spray Booth meets the definition of "group 1 miscellaneous coating operations."

For process units not subject to the compliance options or work practice requirements specified in § 63.2240, Godfrey is not required to comply with the compliance options, work practice requirements, performance testing, monitoring, and recordkeeping or reporting requirements of this subpart or any other requirements in 40 C.F.R. Part 63, Subpart A except for the initial notification requirements in § 63.9(b). [40 C.F.R. § 63.2252] This includes, but is not limited to, green end operations, blenders, formers, and sawing and sanding operations.

Upon initial startup of the affected source, Godfrey must be in compliance with the applicable compliance options, operating requirements, and work practice requirements during all operating times. [40 C.F.R. § 63.2250(f)] As defined in 40 C.F.R. § 63.2292, "affected source" is the collection of all of the subject process units. The definition of "Startup, initial" clarifies that initial startup does not include operation solely for testing equipment. Therefore, Godfrey must be in compliance with the applicable compliance options, operating requirements, and work practice requirements during all operating times once testing is complete and the affected source as a whole begins production operations. This commissioning time period is addressed further in Section II(J) of this license.

A summary of the currently applicable 40 C.F.R. Part 63, Subpart DDDD requirements for Godfrey is listed below.

1. Emission Limits and Operating Requirements

   Godfrey will utilize the compliance option for add-on control systems pursuant to 40 C.F.R. § 63.2240(b).

a. The exhaust from Dryers #1 and #2 and Press #1 must comply with **one** of the following emission limits during all operating times except for periods of process unit or control device startup, shutdown, and malfunction:

Pollutant	Emission Limit
Total Hydrocarbon (THC)	Reduce emissions by 90%
Total Hydrocarbon (THC)	20 ppmdv (as carbon)
Methanol	Reduce emissions by 90%
Methanol	1 ppmvd if uncontrolled emissions entering control device are greater than or equal to 10 ppmvd
Formaldehyde	Reduce emissions by 90%
Formaldehyde	1 ppmvd if uncontrolled emissions entering control device are greater than or equal to 10 ppmvd

[40 C.F.R. §§ 63.2240(b), 63.2250(f), and Table 1B]

b. The 3-hour block average firebox temperature for RTOs #1, #2, and #3 each shall be maintained above the minimum temperature established during its most recent performance test. Godfrey shall be in compliance with these operating requirements during all operating times except for periods prior to initial startup and during safety-related shutdowns conducted according to the work practice requirements of Table 3, Row 6. [40 C.F.R. §§ 63.2240(b), 63.2250(f), and Table 2, Row 1]

c. The capture device on Press #1 must either meet the definition of wood products enclosure in 40 C.F.R. § 63.2292 or achieve a capture efficiency of 95% or greater. [40 C.F.R. § 63.2240(b)]

d. Godfrey shall minimize the length of time when compliance options and operating requirements are not met due to safety-related shutdowns. [40 C.F.R. § 63.2250(f)(5)]

e. Godfrey shall always operate and maintain the affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 C.F.R. Part 63, Subpart DDDD. The general duty to minimize emissions does not require Godfrey to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Department which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 C.F.R. § 63.2250(g)]

2. Work Practice Requirements

   a. The Edge Seal Spray Booth shall use only non-HAP coatings. [40 C.F.R. § 63.2241(a) and Table 3, Row 5]

      Non-HAP coatings are defined as coatings with HAP contents below 0.1% by mass for Occupational Safety and Health Administration (OSHA)-defined carcinogens as specified in 29 C.F.R. § 1910.1200, Appendix A, § A.6.4 and below 1.0% by mass for other HAP compounds. [40 C.F.R. § 63.2292]

   b. During safety-related shutdowns, Godfrey shall follow documented site-specific procedures such as use of automated controls or other measures that have been developed to protect workers and equipment to ensure that the flow of raw materials (such as furnish or resin) and fuel or process heat (as applicable) ceases and that material is removed from the process unit(s) as expeditiously as possible given the system design to reduce air emissions. Godfrey shall make a record of safety-related shutdown procedures available for inspection by the Department upon request. [40 C.F.R. § 63.2250(f)(6), Table 3, Row 6, and Table 6, Row 6]

3. Initial Compliance Demonstration

   a. Godfrey shall conduct initial performance tests and establish the minimum firebox temperatures for RTOs #1, #2, and #3 (each) no later than 180 calendar days after initial startup. [40 C.F.R. §§ 63.2260(a) and 63.2261(a)]

   b. Performance tests shall be conducted pursuant to 40 C.F.R. § 63.2262 and Table 4. [40 C.F.R. § 63.2260(a)]

   c. Godfrey shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 C.F.R. § 63.2280(d). [40 C.F.R. § 63.2260(c)]

   d. Godfrey shall submit documentation that the enclosure on Press #1 meets the enclosure design criteria in 40 C.F.R. § 63.2292 or the results of a capture efficiency verification with the Notification of Compliance Status. [40 C.F.R. §§ 63.2260(b), 63.2267, and Table 5, Row 6]

   e. Godfrey shall submit a signed statement with the Notification of Compliance Status that it is using non-HAP coatings in the Edge Seal Spray Booth. [40 C.F.R. § 63.2260(b) and Table 6, Row 5]

   f. Godfrey shall conduct initial compliance demonstrations that do not require performance tests (i.e., meet the requirements to use non-HAP coatings and follow

site-specific procedures for safety-related shutdowns) no later than 30 calendar days after initial startup. [40 C.F.R. § 63.2261(b)]

4. Continuous Compliance and Monitoring

a. Godfrey shall conduct repeat performance tests using the applicable methods specified in Table 4 within 60 months of the previous performance test. [40 C.F.R. § 63.2271(a) and Table 7, Row 7]

b. Godfrey shall operate the following continuous parameter monitoring systems (CPMS):

Equipment	CPMS
RTO #1	Firebox Temperature
RTO #2	Firebox Temperature
RTO #3	Firebox Temperature

[40 C.F.R. § 63.2271(a) and Table 7, Row 1]

c. Each CPMS shall be installed, operated, and maintained according to the following:

(1) The CPMS must be capable of completing a minimum of one cycle of operation for each successive 15-minute period.
(2) At all times, Godfrey shall maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
(3) Godfrey shall maintain records of the results of each inspection, calibration, and validation check.
(4) Temperature sensors shall be located in a position that provides a representative temperature.
(5) Temperature sensors shall have a minimum accuracy of 4 °F or 0.75% of the temperature value, whichever is larger.
(6) If a chart recorder is used, it must have a sensitivity with minor divisions not more than 20 °F.
(7) Godfrey shall validate the temperature sensor's reading at least semiannually using the requirements of 40 C.F.R. § 63.2269(b)(4)(i), (ii), (iii), (iv), or (v).
(8) Godfrey shall conduct validation checks using the methods in 40 C.F.R. § 63.2269(b)(4) any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor.
(9) At least quarterly, Godfrey shall inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.

[40 C.F.R. §§ 63.2269(a) and (b)]

d. Each CPMS shall be operated continuously during all operating times except for monitor malfunctions, associated repairs, and required quality assurance or control

activities. For purposes of calculating data averages, Godfrey shall not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities. Godfrey shall use all data collected during all other periods of operation. [40 C.F.R. § 63.2270(b)]

e. Godfrey shall not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities or data recorded during periods of safety-related shutdown in data averages and calculations used to report emission or operating levels, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. Godfrey shall use all the data collected during all other periods in assessing the operation of the control system. [40 C.F.R. § 63.2270(c)]

f. Godfrey shall determine the 3-hour block average of all recorded readings calculated after every 3 hours of operation as the average of the evenly spaced recorded readings in the previous 3 operating hours (excluding periods described previously). To calculate the data averages for each 3-hour averaging period, Godfrey must have at least 75% of the required recorded readings for that period using only recorded readings that are based on valid data. [40 C.F.R. §§ 63.2270(d) and (f)]

5. Recordkeeping

a. Records shall be kept for a period of 5 years. [40 C.F.R. § 63.2283(b)]

Note: Standard Condition (8) requires records to be maintained for a minimum of six years.

b. Records shall be kept on site, or be accessible from on site, for at least 2 years. Records may be kept off site for the remaining years. [40 C.F.R. § 63.2283(c)]

c. Any records that are submitted electronically through EPA's Compliance and Emissions Data Reporting Interface (CEDRI) may be maintained in electronic format. Godfrey shall make any such records, data, and reports available to the Department or EPA upon request, including as part of an on-site compliance evaluation. [40 C.F.R. § 63.2283(d)]

d. Godfrey shall maintain records in accordance with 40 C.F.R. Part 63, Subpart DDDD including, but not limited to, the following:

(1) Copies of notifications and reports submitted to comply with the subpart along with any supporting documentation; [40 C.F.R. § 63.2282(a)(1)]

(2) The records in §§ 63.2282(a)(2)(i) through (iv) related to startup, shutdown, failures to meet the standard, and actions taken to minimize emissions. [40 C.F.R. § 63.2282(a)(2)]
(3) Records demonstrating that only non-HAP coatings are used in the Edge Seal Spray Booth; [40 C.F.R. § 63.2271(a) and Table 8, Row 5]
(4) Records of the safety-related shutdown procedures available for inspection by the Department upon request; [40 C.F.R. § 63.2271(a) and Table 8, Row 6]
(5) Records of performance tests and performance evaluations; and [40 C.F.R. § 63.2282(a)(4)]
(6) All CPMS data.[40 C.F.R. § 63.2282(b)]

6. Notifications and Reports

Godfrey shall submit to the Department and EPA all notifications and reports required by 40 C.F.R. Part 63, Subpart DDDD including, but not limited to, the following:

a. Godfrey shall submit an Initial Notification no later than 120 calendar days after initial startup. The Initial Notification shall be submitted through CEDRI. [40 C.F.R. § 63.2280(b)]

b. Godfrey shall submit written notification to the Department and EPA of intent to conduct a performance test at least 60 days before the performance test is scheduled to begin. [40 C.F.R. § 63.2280(c)]

c. Godfrey shall submit a Notification of Compliance Status for each subsequent performance test through CEDRI as specified in 40 C.F.R. §§ 63.2281(h), (k), and (l). The Notification of Compliance Status shall include a summary of the performance test results. [40 C.F.R. § 63.2280(d)]

d. The Notification of Compliance Status shall be submitted before the close of business on the 60th calendar day following the completion of the performance test. [40 C.F.R. § 63.2280(d)(2)]

e. Within 60 days of the date of completing each performance test, Godfrey must submit the results of the performance test following the procedures specified in 40 C.F.R. §§ 63.2281(i)(1) – (3). [40 C.F.R. §§ 63.2281(i)]

Note: Standard Condition (11)(C) requires a written report of the performance test results be submitted to the Department within 30 days of the date of test completion.

f. Godfrey shall notify the Department and EPA within 30 days before taking any of the following actions:

(1) Modifying or replacing the control system for any process unit subject to the compliance options and operating requirements of this subpart; or
(2) Changing a continuous monitoring parameter or the value or range of values of continuous monitoring parameter for any process unit or control device.
[40 C.F.R. §63.2280(g)]

g. Godfrey shall prepare and submit a compliance report every six months which contains the information contained in § 63.2281(c) through (e) as applicable. [40 C.F.R. § 63.2281(a) and Table 9, Row 1]

The first compliance report must cover the period beginning on the date of initial startup and ending on June 30 or December 31 and lasting at least six months but less than 12 months. [40 C.F.R. § 63.2281(b)(1)]

The first compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 or December 31, respectively. [40 C.F.R. § 63.2281(b)(2)]

h. Godfrey shall submit all subsequent compliance reports through CEDRI as specified in 40 C.F.R. §§ 63.2281(h), (k), and (l). [40 C.F.R. § 63.2281(b)(6)]

Each subsequent compliance report must cover the semiannual period from January 1 through June 30 or July 1 through December 30, as applicable.
[40 C.F.R. § 63.2281(b)(3)]

Each subsequent compliance report is due no later than July 31 or January 31 for compliance periods ending on June 30 or December 31, respectively.
[40 C.F.R. § 63.2281(b)(4)]

J. Commissioning

Facility commissioning will take place using a systematic approach to ensure that each process is fully operational before commencing full-scale production. Commissioning activities are part of the construction process and not normal operation.

Initial commissioning activities for Furnaces #1 and #2 include low-level combustion to remove moisture from the refractory materials. This “bake-out” period is expected to last approximately two weeks and will require use of Bypass Stacks #1 and #2.

Following the refractory bake-out period, the dryers will be commissioned at low load followed by commissioning of the press. During these periods, each emission unit will

operate at 20-30% of its normal operating load and will experience frequent startups and shutdowns.

Due to this intermittent, low-load operation, Godfrey proposed not to require continuous operation of the facility's pollution control equipment until commissioning is complete or 90 days from the initiation of commissioning on a line by line basis as described below, whichever comes first. Continuous use of the control equipment during commissioning would result in significant natural gas and electricity consumption during a period when very low levels of pollutants are being emitted.

1. Furnaces

   Pursuant to 40 C.F.R. Part 60, Subpart Db, Godfrey must demonstrate compliance no later than 180 days after the date of initial startup. Therefore, to allow for commissioning, the following requirements do not apply until 90 days from first fire in one of the furnaces:

   a. Use of the emergency bypass stacks on Furnaces #1 and #2 only during emergency situations;
   b. Operation of the pollution control equipment associated with Furnaces #1 and #2;
   c. Emission limits for Furnaces #1 and #2 and visible emissions standards for Stack #1; and
   d. Continuous monitoring of NO_x from Furnaces #1 and #2 (i.e., use of a NO_x CEMS).

2. Dryers and Press

   Godfrey must comply with the requirements of 40 C.F.R. Part 63, Subpart DDDD upon initial startup. Pursuant to 40 C.F.R. § 63.2292, initial startup does not include operation solely for testing of equipment. Therefore, to allow for commissioning, the following requirements do not apply until initial startup of the facility as defined in Subpart DDDD:

   a. Operation of the pollution control equipment associated with Furnaces/Dryers #1 and #2 and Press #1; and
   b. Emission limits for Furnaces/Dryers #1 and #2 and Press #1 and visible emissions standards for Stacks #1 and #2.

Godfrey shall notify the Department in writing of the date of first fire in each furnace and the date of initial startup of Dryer #1, Dryer #2, and Press #1 within 10 calendar days of each occurrence.

K. Generator #1

Godfrey proposes to install and operate Generator #1 to provide backup power to the facility should grid power be lost. It will also provide power for emergency cooling of the Thermal Oil System. The cooling system is designed to cool the thermal fluid during power failures by providing emergency pump circulation.

Generator #1 is part of a generator set which will be powered by an engine with a heat input not to exceed 500 kW (approximately 5.0 MMBtu/hr). It will fire distillate fuel with a sulfur content not to exceed 0.0015% by weight. It will be a new engine with an expected model year of 2025.

1. BACT Findings

Generator #1 is a distillate fuel-fired emergency engine that will be certified by the manufacturer as meeting or exceeding the appropriate emission standards contained in 40 C.F.R. Part 60, Subpart IIII. Due to its size and use as an emergency engine, the Department does not consider additional add-on controls feasible.

The BACT emission limits for Generator #1 are based on the following:

$PM/PM_{10}/PM_{2.5}$	–	0.12 b/MMBtu 06-096 C.M.R. ch. 115, BACT
SO_2	–	Combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO_x	–	3.2 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
CO	–	0.85 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
VOC	–	0.09 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
Visible Emissions	–	06-096 C.M.R. ch. 101, § 4(A)(4)

The Department finds BACT for Generator #1 to be the emission limits below.

Unit	Pollutant	lb/MMBtu
Generator #1	PM	0.12

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.60	0.60	0.60	0.01	16.00	4.25	0.45

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis.

2. State Rules

   a. 06-096 C.M.R. ch. 101, *Visible Emissions Regulation*

      Generator #1 is subject to a visible emissions standard pursuant to 06-096 C.M.R. ch. 101, §§ 4(A)(4) that is equivalent to the BACT visible emissions limit for this equipment.

   b. 06-096 C.M.R. ch. 169, *Stationary Generators*

      Stationary Generators, 06-096 C.M.R. ch. 169 (Chapter 169), is applicable to Generator #1. It is an emergency generator powered by an engine with a rated output of less than 1,000 brake horsepower (747 kW). Chapter 169 identifies emission standards for generator engines subject to this chapter and stack height requirements for certain generator engines subject to this chapter.

      (1) Chapter 169 Emission Standards Requirements

         For Generator #1, Godfrey shall comply with the emission standards for emergency generators by complying with the applicable standards contained in 40 C.F.R. Part 60, Subpart IIII. [06-096 C.M.R. ch. 169, § 4(B)(1)]

      (2) Chapter 169 Stack Height Requirements

         Chapter 169 identifies stack height requirements for any stack used to exhaust a generator engine or combination of generator engines with a combined rated output equal to or greater than 1,000 brake horsepower (747 kW). Individual generator engines with a maximum power capacity of less than 300 kW are not included in the assessment of the combined generator power capacity exhausted through a common stack. [06-096 C.M.R. ch. 169, § 6]

         There are no stack height requirements in Chapter 169 applicable to Generator #1 because it exhausts through its own stack and its rated output is less than 1,000 brake horsepower (747 kilowatts). [06-096 C.M.R. ch. 169, § 6]

3. New Source Performance Standards (NSPS)

   Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to Generator #1 because the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart IIII, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart IIII, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or

local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

(ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. §§ 60.4211(f) and 60.4219]

b. 40 C.F.R. Part 60, Subpart IIII Requirements

(1) Manufacturer Certification Requirement
The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4205(b)]

(2) Ultra-Low Sulfur Fuel Requirement
The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

(3) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

(4) Operation and Maintenance Requirements
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. Godfrey may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

Godfrey shall have available for review by the Department a copy of the manufacturer's emission-related written instructions for engine operation and maintenance. [06-096 C.M.R. ch. 115, BACT]

(5) Annual Time Limit for Maintenance and Testing
As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include

peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 60.4211(f)]

(6) Initial Notification Requirement
No initial notification is required under 40 C.F.R. Part 60, Subpart IIII for emergency engines. [40 C.F.R. § 60.4214(b)]

(7) Recordkeeping
Godfrey shall keep records that include the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

L. General Process Emissions

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101 § 4(B)(4)]

M. Fugitive Emissions

Godfrey shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

Godfrey shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.
[06-096 C.M.R. ch. 101, § 4(C)]

N. Emission Statements

Godfrey is subject to emissions inventory requirements contained in *Emission Statements*, 06-096 C.M.R. ch. 137. Godfrey shall maintain records sufficient to complete and submit the annual emissions statement as required by this rule.

Every third year, or as requested by the Department, Godfrey shall report to the Department emissions of hazardous air pollutants as required pursuant to 06-096 C.M.R. ch. 137, § (3)(C). The next report is due no later than May 15, 2027, for emissions occurring in calendar year 2026. The Department will use these reports to calculate and invoice for the

applicable annual air quality surcharge for the subsequent three billing periods. Godfrey shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

O. Incorporation Into the Part 70 Air Emission License

Pursuant to *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a major source that has undergone NSR requirements processed through 06-096 C.M.R. ch. 115, the source must apply for their initial Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5.

P. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- Operation of the Furnaces/Dryers #1 and #2 and Press #1 each at the licensed lb/hr emission rates for 8,760 hr/year;
- Operation of the TOS Backup Heater at the licensed lb/hr emission rates for 500 hr/year;
- Operation of Generator #1 for 100 hr/year; and
- For the Blending, Forming, and Finishing operations, the maximum production rate of 159.5 $MSF_{3/8}$/hr for 8,760 hr/year using NCASI emission factors.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	VOC
Stack #1 (Furnaces & Dryers)	79.1	79.1	79.1	48.3	396.2	240.9	226.9
Stack #2 (Press #1)	43.8	43.8	43.8	0.1	189.2	154.2	46.3
Stack #3 (TOS Backup Heater)	0.6	0.6	0.6	–	0.6	1.0	0.1
Generator #1	–	–	–	–	0.8	0.2	–
Material Handling	1.4	1.4	1.4	–	–	–	–
Blending/Forming	–	–	–	–	–	–	102.9
Finishing	–	–	–	–	–	–	41.2
Total TPY	**124.9**	**124.9**	**124.9**	**48.4**	**586.8**	**396.3**	**417.4**

III. AMBIENT AIR QUALITY ANALYSIS

A. Overview

A refined modeling analysis was performed to show that emissions from Godfrey, in conjunction with other sources, will not cause or contribute to violations of National Ambient Air Quality Standards (NAAQS) for SO_2, PM_{10}, $PM_{2.5}$, NO_2, or CO or to Class II increments for SO_2, PM_{10}, $PM_{2.5}$, or NO_2.

As required by 06-096 C.M.R. ch. 115, the Department notified Federal Land Managers (FLMs) representing the US Fish & Wildlife Service, the National Park Service, and the National Forest Service of Godfrey's proposed new major source. The notification contained a detailed description of the proposed project, the proposed tpy emissions of SO_2, PM_{10}, $PM_{2.5}$, and NO_x, and the distances to each of the Class I areas in or near Maine. Based upon the magnitude of proposed emissions increase and the distance from the source to each Class I area, the affected FLMs and the Department have determined that an assessment of Class I Air Quality Related Values is not required.

B. Model Inputs

The AERMOD refined dispersion model was used to address NAAQS and increment impacts in all areas. The modeling analysis accounted for the potential of building wake and cavity effects on emissions from all modeled stacks that are below their calculated formula GEP stack heights.

All modeling was performed in accordance with all applicable requirements of the Department and EPA. The most-recent regulatory version of the AERMOD model and its associated processors were used to conduct the analyses.

A valid five-year, hourly, on-site meteorological database was used in the analysis. Five years of data was collected at heights of 10 and 91 meters at the former International Paper Jay meteorological monitoring site during the period of 1992-1996. All missing data were interpolated or coded as missing pursuant to EPA guidance.

In addition, hourly Augusta National Weather Service (NWS) data from the same time period were used to supplement the primary surface dataset for the required variables that were not explicitly collected at the monitoring site.

The on-site surface meteorological data was combined with concurrent hourly cloud cover and upper-air data obtained from the Caribou NWS. Missing cloud cover and/or upper-air data values were interpolated or coded as missing pursuant to EPA guidance.

All necessary representative micrometeorological surface variables for inclusion into AERMET (surface roughness, Bowen ratio and albedo) were calculated using the AERSURFACE utility program and from procedures recommended by EPA.

Point-source parameters, used in the NAAQS and Class II increment modeling for Godfrey, are listed in Table III-1.

TABLE III-1 : Point Source Stack Parameters

Stacks	Stack Base Elevation (m)	Stack Height (m)	GEP Stack Height (m)	Stack Diameter (m)	UTM Easting NAD83 (m)	UTM Northing NAD83 (m)
MAXIMUM LICENSE ALLOWED						
Godfrey						
• Stack #1 – Dryers 100%	124.36	50.29	74.68	3.25	401,929	4,928,662
• Stack #2 – Press 100%	124.36	45.72	74.68	2.21	401,712	4,928,812
JGT2						
• Combined Stack	124.97	64.62	104.58	5.93	401,227	4,928,890
2012 BASELINE ($PM_{2.5}$ INCREMENT)						
Godfrey did not exist during the 2012 baseline year, no $PM_{2.5}$ credits to be taken.						
1987 BASELINE (NO_2 INCREMENT)						
Godfrey did not exist during the 1987 baseline year, no NO_2 credits to be taken.						
1977 BASELINE (SO_2/PM_{10} INCREMENT)						
Godfrey did not exist during the 1977 baseline year, no SO_2/PM_{10} credits to be taken.						

Emission parameters, used in the NAAQS and Class II increment modeling, are listed in Table III-2.

TABLE III-2 : Stack Emission Parameters

Stacks	Averaging Periods	SO_2 (g/s)	PM_{10} (g/s)	$PM_{2.5}$ (g/s)	NO_x (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
MAXIMUM LICENSE ALLOWED								
Godfrey								
• Stack #1 – Dryers 100%	All	1.39	2.28	2.28	11.40	6.93	383.15	23.41
• Stack #2 – Press 100%	All	0.002	1.26	1.26	5.43	4.42	344.82	38.39
JGT2								
• Combined Stack	Short Term	-	2.29	2.29	3.62	-	421.50	17.16
• Combined Stack	Annual	-	0.12	0.12	1.14	-	421.50	24.52
2012 BASELINE ($PM_{2.5}$ INCREMENT)								
Godfrey did not exist during the 2012 baseline year, no $PM_{2.5}$ credits to be taken.								
1987 BASELINE (NO_2 INCREMENT)								
Godfrey did not exist during the 1987 baseline year, no NO_2 credits to be taken.								
1977 BASELINE (SO_2/PM_{10} INCREMENT)								
Godfrey did not exist during the 1977 baseline year, no SO_2/PM_{10} credits to be taken.								

C. Single Source Modeling Impacts – Significant Impact Analysis

AERMOD modeling was performed for a range of Godfrey operating scenarios that represented a range of maximum, typical, and minimum boiler/equipment operations.

The AERMOD significant impact results are shown in Table III-3. Maximum predicted impacts that exceed their respective significance level are indicated in boldface type. For comparison to the Class II significance levels, the impacts for 1-hour SO_2, 1-hour NO_2, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$ were conservatively based on the maximum High-1st-High predicted values, averaged over all five years of meteorological data. All other pollutants/averaging periods were conservatively based on their maximum High-1st-High predicted values.

For the purpose of determining maximum predicted impacts, the following assumptions were used:

- All NO_x emissions were conservatively assumed to convert to NO_2 (USEPA Tier I Method).
- All particulate emissions were conservatively assumed to convert to PM_{10} and $PM_{2.5}$.

TABLE III-3 : Maximum AERMOD Significant Impact Analysis Results from Godfrey Alone

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Scenario	Class II Significance Level ($\mu g/m^3$)
SO_2	1-hour	**9.76**	401,880	4,928,914	119.53	1	**7.8**
	3-hour	9.46	401,880	4,928,914	119.53	3	**25**
PM_{10}	24-hour	**9.81**	401,726	4,929,033	121.95	2	**5**
$PM_{2.5}$	24-hour	**6.86**	401,725	4,929,033	121.95	2	**1.2**
	Annual	**0.45**	401,726	4,929,033	121.95	2	**0.2**
NO_2	1-hour	**91.02**	401,898	4,928,966	108.24	2	**7.5**
	Annual	**2.21**	401,726	4,929,033	121.95	2	**1**
CO	1-hour	79.31	401,899	4,928,966	108.24	1	**2,000**
	8-hour	51.41	401,725	4,928,033	119.53	2	**500**

D. Secondary Formation of $PM_{2.5}$

New major sources or existing sources undergoing a major modification must assess their potential impacts on the secondary formation of $PM_{2.5}$ in accordance with federal regulations. Emissions of NO_x and SO_2 can react to form fine particulate matter ($PM_{2.5}$). Primary and secondary $PM_{2.5}$ in the atmosphere consists of a complex mixture of various components including sulfates (SO_4), nitrates (NO_3), organic and elemental carbon as well as crustal material (dust, sea salt, metals, and trace elements).

The formation of secondary $PM_{2.5}$ is dependent on the concentrations of precursor and relative species, atmospheric conditions, and the interactions of those precursors with other entities, such as particles, rain, fog, or cloud droplets.

As such, $PM_{2.5}$ NAAQS and Class II increment compliance demonstrations must account for contributions due to primary $PM_{2.5}$ (from a source's direct $PM_{2.5}$ emissions), as well as secondarily formed $PM_{2.5}$ resulting from the source's precursor emissions.

Since Godfrey's proposed NO_x and SO_2 emissions for this project are each greater than 40 tpy, a review of secondary impacts due to $PM_{2.5}$ precursor emissions (secondary $PM_{2.5}$) is required. Since the contribution from secondary formation of $PM_{2.5}$ cannot be explicitly accounted for in the AERMOD model, the impacts of secondarily formed $PM_{2.5}$ from Godfrey was determined using a Tier I analysis following methodologies prescribed in EPA's *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program (April 2019).* On February 24, 2024, EPA revised the annual NAAQS for $PM_{2.5}$. As a result, EPA has released additional memorandums to update the *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program (April 2019)* and *Guidance for Ozone and Fine Particulate Matter Permit Modeling (2022).*

For a Tier I secondary formation assessment, a source uses technically credible empirical relationships between precursor emissions and secondary impacts, based upon previously conducted EPA modeling. Specifically, EPA has performed single-source photochemical modeling to examine the range of modeled estimated impacts of secondary $PM_{2.5}$ formation for different theoretical source types (based on pollutant, magnitude of emissions, and stack height) for facilities in different geographical locations in the United States.

Godfrey estimated the potential impact of its precursor emissions using Equation 2 from EPA's MERPs guidance, in which a source's impacts are estimated as the product of the relevant hypothetical source air quality impacts relative to emissions, scaled either upward or downward to the emission rate of the project itself. Equation 2 is presented below:

Total Project Impact =

*Project TPY NO_x increase * (Modeled air quality impact from hypothetical source / Modeled emission rate from hypothetical source) +*

*Project TPY SO_2 increase * (Modeled air quality impact from hypothetical source / Modeled emission rate from hypothetical source)*

TABLE III-4 : Secondary $PM_{2.5}$ from NO_x & SO_2 Precursors

Pollutant	Potential Increase of Precursors (TPY)	Impact/Emissions Ratio ($\mu g/m^3$ / TPY)	Estimated Secondary $PM_{2.5}$ Impacts ($\mu g/m^3$)
NOx	589.4	0.000074	0.04375
SO_2	48.4	0.000083	0.04012
Total Estimated 24-Hour Secondary $PM_{2.5}$ from NO_x and SO_2 precursors			**0.08387**

Using this methodology, the total estimated secondary impacts due to Godfrey's NO_x and SO_2 precursor emissions were predicted to be extremely low (~0.084 $\mu g/m^3$) and are not expected to contribute significantly to the $PM_{2.5}$ NAAQS or Class II increment impacts.

The total estimated secondary impacts due to Godfrey's NO_x and SO_2 precursor emissions will be added to the final predicted NAAQS and Class II increment in Tables III-6 and III-7, respectively.

E. Combined Source Modeling Impacts

As indicated in boldface type in Table III-3, pollutants/averaging periods with predicted impacts greater than their respective significant impact levels must include all other facility-wide emissions as well as consider any local sources for inclusion in a combined-source analysis.

The Department examined other nearby sources to determine if any impacts would be significant in or near Godfrey's significant impact area. Due to the location of Godfrey, extent of the predicted significant impact area on a pollutant-by-pollutant basis, and other nearby source's current-actual emissions, the Department has determined that only one additional source needs to be explicitly included into a combined-source AERMOD modeling analysis: JGT2.

In addition to the consideration of other sources explicitly modeled, the analysis must also account for the existing air quality background concentrations by using monitored data representative of the area.

Background concentrations, listed in Table III-5, are derived from representative rural background data for use in the Central Maine region.

TABLE III-5 : Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)	Monitor Site Name Location
SO_2	1-hour	5	Mic Mac Site, Presque Isle
	3-hour	4	
PM_{10}	24-hour	37	Lincoln School, Augusta
$PM_{2.5}$	24-hour	12	Presque Isle DEP Site
	Annual	4	
NO_2	1-hour	40	Mic Mac Site, Presque Isle
	Annual	4	
CO	1-hour	1102	Mic Mac Site, Presque Isle
	8-hour	789	

For the purpose of determining maximum predicted impacts for comparison against NAAQS, the predicted impacts were explicitly normalized to the form of their respective NAAQS.

As shown in Table III-6, Godfrey and JGT2's maximum modeled impacts were added with conservative background concentrations to demonstrate compliance with NAAQS. Because all pollutant/averaging period impacts using this method meet their respective standards, no further NAAQS modeling analyses are required to be performed.

TABLE III-6 : Maximum Combined Source Impacts (μg/m³)

Pollutant	Averaging Period	Max Impact (μg/m³)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Back-Ground (μg/m³)	Total Impact (μg/m³)	NAAQS (μg/m³)
SO_2	1-hour	8.06	401,880	4,928,914	119.53	5	13.06	196
	3-hour	8.02	401,880	4,928,914	119.53	4	12.02	1,300
PM_{10}	24-hour	6.27	401,726	4,929,033	121.95	58	64.27	150
$PM_{2.5}$	24-hour	3.72	401,726	4,929,033	121.95	12	15.80*	35
	Annual	0.51	401,726	4,929,033	121.95	4	4.59*	12
NO_2	1-hour	79.41	401,726	4,929,033	121.95	40	119.41	188
	Annual	2.21	401,726	4,929,033	121.95	4	6.21	100
CO	1-hour	76.82	401,899	4,928,966	108.24	1102	1178.82	40,000
	8-hour	47.78	401,726	4,929,033	121.95	789	836.78	10,000

* Final 24-Hour and Annual predicted impacts for $PM_{2.5}$ were adjusted by 0.08 μg/m³ to account for secondary formation of particulates, as calculated in Section D.

F. Secondary Formation of Ozone

EPA's *New Source Review Workshop Manual (Draft, 1990)* requires that any major new source or source undergoing a major modification evaluate for the potential formation of ozone, which is a secondary pollutant formed through non-linear photochemical reactions, primarily driven by precursor emissions of NO_x and VOC in the presence of sunlight.

NO_x and VOC precursor contributions to the 8-hour daily maximum ozone are considered together to determine if a source's air-quality impact would exceed a prescribed critical threshold value. Since the chemical formation of ozone associated with precursor emissions cannot be explicitly accounted for in AERMOD, USEPA has developed a two-tiered approach for addressing single-source impacts of ozone formation.

MERPs are expressed as an annual emissions rate (in tpy) of precursor emissions and relate maximum downwind impacts to a critical threshold value. A value less than 100% indicates that the USEPA's critical air-quality threshold ozone value of 1 part per billion (ppb) will not be exceeded.

Godfrey estimated the potential impact of its precursor emissions using Equation 9-1 from EPA's MERPs guidance, in which a source's impacts are estimated as the sum of the relevant hypothetical source air quality impacts relative to NO_x and VOC emissions, scaled either upward or downward to the emission rate of the project itself. Equation 9-1 is presented below:

Total Project Impact =

*Project TPY NO_x increase * (Modeled air quality impact from hypothetical source / Modeled emission rate from hypothetical source) +*

*Project TPY VOC increase * (Modeled air quality impact from hypothetical source / Modeled emission rate from hypothetical source)*

Using methodologies from EPA's *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program (April 2019)* and data from MERP values representative of the Northeast climate zone from Table 4-1, the proposed emissions increase can be conservatively expressed as a percent of the MERP for each precursor. Those individual contributions are then summed to achieve a final estimated potential secondary ozone concentration, as shown in the calculation below:

589.4 TPY NO_x increase * (0.80988 O_3 MERP/ 500 TPY NO_x 8-hour daily maximum O_3 MERP)

+

378.3 TPY VOC increase * (0.22189 O_3 MERP/ 500 TPY VOC 8-hour daily maximum O_3 MERP)

0.955 + 0.168 = 1.122 ppb

Since the final calculated total project secondary formed O_3 impact is greater than EPA's critical air-quality threshold value of 1 ppb, Godfrey has the potential to contribute to significant O_3 formation. Therefore, a cumulative assessment needs to be conducted.

Using EPA's MERPs guidance referenced above, the cumulative assessment sums Godfrey's estimated potential secondary formed O_3 concentration value of 1.122 ppb with the annual monitored O_3 design value of 55 ppb, which is then compared to the O_3 NAAQS of 70 ppb.

1.122ppb + 55ppb = 56.122 ppb (less than the NAAQS value of 70ppb)

Because this results in a an O_3 air quality impact below the NAAQS (annual fourth-highest daily maximum 8-hour concentration, averaged over three years), there is no NAAQS violation for Godfrey's emissions to cause or contribute to.

G. Class II Increment

AERMOD was used to predict maximum Class II increment impacts.

Since Godfrey is a new source, there are no baseline credits available for use from emission sources that existed and operated during the 2010 ($PM_{2.5}$) and 1987 (NO_2) and 1977 (SO_2 or PM_{10}) baseline years.

Results of the Class II increment analysis are shown in Tables III-7. All modeled maximum increment impacts were below all increment standards. Because all predicted increment impacts meet increment standards, no additional Class II SO_2, PM_{10}, $PM_{2.5}$, and NO_2 increment modeling needed to be performed.

TABLE III-7 : Class II Increment Consumption

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Class II Increment ($\mu g/m^3$)
SO_2	3-hour	8.02	401,880	4,928,914	119.53	512
	24-Hour	4.29	401,880	4,928,914	119.53	91
	Annual	0.14	401,880	4,928,914	119.53	20
PM_{10}	24-Hour	8.44	401,726	4,929,033	121.95	30
	Annual	0.51	401,726	4,929,033	121.95	17
$PM_{2.5}$	24-Hour	8.52*	401,726	4,929,033	121.95	9
	Annual	0.59*	401,726	4,929,033	121.95	4
NO_2	Annual	2.21	401,726	4,929,033	121.95	25

* Final 24-Hour and Annual predicted impacts for $PM_{2.5}$ were adjusted by 0.08 $\mu g/m^3$ to account for secondary formation of particulates, as calculated in Section D.

EPA's *New Source Review Workshop Manual (Draft, 1990)* requires that any major new source or major source undergoing a major modification provide analyses of additional impacts that may occur as a direct result of the general, commercial, residential, industrial, and mobile-source growth associated with the construction and/or operation of that source.

GENERAL GROWTH: The proposed Godfrey facility intends to re-purpose some of the existing infrastructure from the now defunct Pixelle Paper mill. The proposed facility is not expected to induce any secondary growth at the project site.

Some very minor increases in localized emissions due to construction-related activities may occur, with these possible emissions likely stemming from additional truck and contractor vehicle traffic. Any increase in potential emissions of NO_x and $PM_{2.5}$ due to this vehicle traffic will be temporary and short-lived.

AREA SOURCE GROWTH: Population growth in the general area of Godfrey can be used as a surrogate factor for the estimating growth in emissions from related residential, commercial, and industrial growth.

The population comparison between the baseline dates and current are show in Table III-8.

TABLE III-8 : Franklin County Population Growth

Pollutant	Baseline Year	Baseline Year Population	2022 Population	Percent Change from Baseline Year
SO_2 / PM_{10}	1977	26,162	30,474	+16.5%
NO_2	1988	28,408		+7.3%
$PM_{2.5}$	2010	30,719		-0.8%

Since the 1977 (SO_2/PM_{10}) and 1988 (NO_x) baseline years, there has been a minor population increase in Franklin County, while there has been a slight decrease since the 2010 ($PM_{2.5}$) baseline date. Therefore, area source growth is not expected to have any significant impact on the available increment in or near Godfrey.

Also, any additional manpower required for the construction and operation of the proposed Godfrey facility will be primarily available locally. Therefore, no new residential, commercial, and/or industrial growth will likely follow.

MOBILE SOURCE GROWTH: Since mobile sources are considered to be minor sources of SO_2, PM_{10}, $PM_{2.5}$, and NO_x, their contribution to increment consumption needs to be evaluated. EPA's *New Source Review Workshop Manual (Draft, 1990)* points out that screening procedures can be used to determine whether additional detailed analyses of minor source emissions are required. Compiling a source inventory may not be required if it can be shown that little or no growth has taken place in the impact area of the proposed source since the pollutant baseline dates were initially established.

The Maine Department of Transportation has compiled Vehicle Miles Traveled (VMT) data for all counties in Maine from 1986 through 2022. As shown in Table III-9, the calculated growth of VMTs in Franklin County over the time period, combined with the increasingly stringent federal emission standards for mobile sources and the concurrent decrease in background concentrations, indicate that mobile sources are not expected to have any significant impact on the available increment in or near the Godfrey facility.

TABLE III-9 : Franklin County Growth in Vehicle Miles Travelled

Pollutant	Baseline Year	Baseline Year VMTs	2022 VMTs	Percent Change from Baseline Year
SO_2 / PM_{10}	1977	242,239,138 (1986)	326,371,324	+34.7%
NO_2	1988	280,192,502 (1988)		+16.4%
$PM_{2.5}$	2010	342,035,227 (2010)		-9.5%

Therefore, no additional analyses of SO_2, PM_{10}, $PM_{2.5}$, and NO_x from mobile sources are required to be performed.

H. Impacts on Plants, Soils, and Animals

In accordance with the *New Source Review Workshop Manual (Draft, 1990)*, Godfrey evaluated the impacts of its emissions using procedures described in *A Screening Procedure for the Impacts of Air Pollution on Plants, Soils and Animals (USEPA, 1981)*.

AERMOD was used to predict maximum impacts in Class II areas. The overall maximum impacts were then compared to EPA's screening concentration values, which represent the minimum concentration at which adverse growth effects or tissue injury in sensitive vegetation can likely be anticipated.

As shown in Table III-10, the maximum Class II modeled impacts were added with conservative background concentrations to demonstrate compliance with the screening concentration values. Predicted and background concentrations for non-standard averaging times were scaled using default AERSCREEN scaling factors, except for 1-week CO which used the 8-hour CO background concentration. In addition, the scaled 24-hour NO_2 background concentration was conservatively used to represent the 1-month average background.

TABLE III-10 : Class II Maximum Impacts on Plants, Soils & Animals (μg/m³)

Pollutant	Averaging Period	Max Impact (μg/m³)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Back-Ground (μg/m³)	Total Impact (μg/m³)	Screening Concentration (μg/m³)
SO_2	1-hour	9.76	401,880	4,928,914	119.53	5	14.76	917
	3-hour	9.47	401,880	4,928,914	119.53	4	13.47	786
	Annual	0.14	401,880	4,928,914	119.53	0.5	0.64	18
NO_2	4-hour	112.29	396,999	4,930,066	301.61	40	152.29	3,760
	8-hour	79.34	401,726	4,929,033	121.95	36	115.34	3,760
	Month	63.28	401,726	4,929,033	121.95	24	87.28	564
	Annual	2.21	401,726	4,929,033	121.95	4	6.21	94
CO	Week	79.31	401,899	4,929,967	108.24	789	868.31	1,800,000

Because all predicted Class II impacts for all pollutants/averaging periods were below their respective screening concentrations, no further assessment of the impacts to plants, soils, and animals is required to be performed.

I. Impacts on Visibility

The *New Source Review Workshop Manual (Draft, 1990)* requires that any major new source or major source undergoing a major modification provide analyses of visibility impacts that may occur as a direct result of the construction and/or operation of that source.

A Class II Visibility Impairment Assessment requires that any Class II federal and state areas (e.g., potentially sensitive parks, forests, monuments, and recreational areas) within

50 km of the project site be identified. There are no such specifically designated Class II area(s) within 50 km of Godfrey.

In 2007, the Department completed and published a comprehensive regional visibility modeling report as part of EPA's *Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations (2004)* rule. This modeling captured emissions and proposed emission rate targets for qualifying sources in Maine, which included the former Pixelle Paper mill. As part of the initiative, the Department issued Pixelle a license amendment to implement site-specific BART limits for several of its emission units.

The Pixelle Paper mill has closed and the associated air emission license was surrendered. The Godfrey project is proposed to be located on the same property as the former mill. Because Godfrey's proposed total emission limits are approximately seven percent of those from the former Pixelle Paper mill, no visibility impairment is expected or likely.

In addition, the Department reviewed results from previous Visibility Impairment Assessments explicitly conducted for sources near Maine's identified Class I areas. Comparing the distances of these sources to the Class I area, the magnitudes of emissions, and the predicted modeling impacts, the Department has determined that Godfrey will not likely cause or contribute to any Class I visibility impacts.

J. Class I Impacts

As required by 06-096 C.M.R. ch. 115, the Department notified FLMs representing the US Fish & Wildlife Service, the National Park Service, and the National Forest Service of the proposed Godfrey major new source. The notification contained a detailed description of the proposed project, the proposed project-only tpy emissions increases of SO_2, PM_{10}, $PM_{2.5}$, and NO_x and the distances to each of the Class I areas in or near Maine. Based upon the magnitude of proposed emissions increase and the distance from the source to each Class I area, the affected FLMs and the Department have determined that an assessment of Class I Air Quality Related Values is not required.

K. Summary

In summary, it has been demonstrated that Godfrey in its proposed configuration will not cause or contribute to a violation of any SO_2, PM_{10}, $PM_{2.5}$, NO_2, or CO NAAQS or to Class II increments for $PM_{2.5}$ or NO_2.

This determination is based on information provided by the applicant regarding the expected construction and operation of the proposed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department

may require Godfrey to submit additional information and may require additional ambient air quality impact analysis at that time.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants New Source Review License A-1181-77-1-N pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the following conditions.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S. § 347-C).

(2) The licensee shall acquire a new or amended air emission license prior to beginning actual construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction,

reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115] Payment of the annual air emission license fee for Godfrey is due by the end of November of each year.
[38 M.R.S. § 353-A(3)

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 C.M.R. ch. 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license.
[06-096 C.M.R. ch. 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.
[06-096 C.M.R. ch. 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:

A. Perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
   1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
   2. Pursuant to any other requirement of this license to perform stack testing.

B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. Submit a written report to the Department within thirty (30) days from date of test completion.

[06-096 C.M.R. ch. 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. Within thirty (30) days following receipt of the written test report by the Department, or another alternative timeframe approved by the Department, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and

B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 C.M.R. ch. 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or license requirement. [06-096 C.M.R. ch. 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an

increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 C.M.R. ch. 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 C.M.R. ch. 115]

(16) The licensee shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605). [06-096 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(17) **Furnaces/Dryers #1 and #2**

A. Fuel

1. Godfrey shall fire only biomass in Furnaces #1 and #2.

2. Godfrey shall fire only natural gas in RTOs #1 and #2.

[06-096 C.M.R. ch. 115, BACT]

B. Control Equipment

1. Godfrey shall operate and maintain a FGR system on Furnace #1 for control of NO_x during all times Furnace #1 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

2. Godfrey shall operate and maintain a FGR system on Furnace #2 for control of NO_x during all times Furnace #2 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

3. Godfrey shall operate and maintain a WESP (WESP #1) on Furnace/Dryer #1 for control of particulate matter during all times Furnace/Dryer #1 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

4. Godfrey shall operate and maintain a WESP (WESP #2) on Furnace/Dryer #2 for control of particulate matter during all times Furnace/Dryer #2 is operating except

during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

5. Godfrey shall operate and maintain an RTO (RTO #1) on Furnace/Dryer #1 for control of VOC during all times Furnace/Dryer #1 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

6. Godfrey shall operate and maintain an RTO (RTO #2) on Furnace/Dryer #2 for control of VOC during all times Furnace/Dryer #2 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

7. The maximum combined heat input to RTO #1 shall not exceed 16 MMBtu/hr demonstrated by records from the manufacturer showing the burner size and/or maximum fuel flow. [06-096 C.M.R. ch. 115, BACT]

8. The maximum combined heat input to RTO #2 shall not exceed 16 MMBtu/hr demonstrated by records from the manufacturer showing the burner size and/or maximum fuel flow. [06-096 C.M.R. ch. 115, BACT]

9. Emissions from Furnaces/Dryers #1 and #2 shall exhaust through Stack #1 except during commissioning, power failures, and emergency periods when a furnace exceeds 2,000 °F or experiences positive pressure. Godfrey shall keep records of the use of Bypass Stacks #1 and #2 as described in the Periodic Monitoring section below. [06-096 C.M.R. ch. 115, BACT]

10. The exhaust from Stack #1 shall be at least 165 feet above ground level and no more than 10.67 feet in diameter. [06-096 C.M.R. ch. 115, BACT]

C. Emission Limits

Emission limits are on a 1-hour block average unless otherwise stated. These limits apply at all times except during safety-related shutdowns and commissioning as described in this license.

1. Emissions from Furnaces/Dryers #1 and #2 shall not exceed the following: [06-096 C.M.R. ch. 115, BACT]

Unit	PM (lb/ODT)	PM_{10} (lb/ODT)	$PM_{2.5}$ (lb/ODT)	NO_x (lb/ODT)	CO (lb/ODT)	VOC (lb/ODT)
Furnace/Dryer #1	0.23	0.23	0.23	1.13	0.69	0.70
Furnace Dryer #2	0.23	0.23	0.23	1.13	0.69	0.70

2. Emissions from Furnaces/Dryers #1 and #2 shall not exceed the following: [06-096 C.M.R. ch. 115, BACT]

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Furnace/Dryer #1	9.03	9.03	9.03	5.51	45.23	27.50	25.90
Furnace/Dryer #2	9.03	9.03	9.03	5.51	45.23	27.50	25.90

D. Visible Emissions

1. Visible emissions from Stack #1 shall not exceed 20% opacity on a 6-minute block average basis, except for periods of commissioning, startup, shutdown, malfunction, or RTO bake-out. Compliance shall be demonstrated pursuant to the requirements of 40 C.F.R. Part 60, Subpart Db. [06-096 C.M.R. ch. 115, BACT]

2. During periods of startup, shutdown, or malfunction, visible emissions from Stack #1 shall not exceed 40% opacity on a 6-minute block average basis. This alternative visible emissions standard shall not be utilized for more than two hours (20 consecutive 6-minute block averages) per event. Godfrey shall keep records sufficient to document the date, time, and duration of each event. Compliance with the visible emissions limit during these periods shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9, upon request by the Department. [06-096 C.M.R. ch. 115, BACT]

3. During periods of RTO bake-out, Godfrey must either meet the visible emission limits above or meet the following work practice standards and alternative visible emissions standard:

   a. Godfrey shall keep records sufficient to document the date, time, and duration of each event;

   b. Bake-out events shall not occur while either Furnace #1 or Furnace #2 are operating;

   c. Bake-out events (where work practice standards are utilized) shall not occur more frequently than six times per calendar year;

   d. Once the RTO chamber is at temperature for bake-out to begin, the duration of each bake-out event shall not exceed three hours; and

   e. During the bake-out event, visible emissions shall not exceed 60% opacity on a 6-minute block average basis.

   [06-096 C.M.R. ch. 115, BACT]

4. Compliance with the alternative visible emission limit during RTO bake-out shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9. Observations shall be started within 20 to 30 minutes after the end of the warm-up cycle and shall be conducted for at least 18 consecutive minutes. [06-096 C.M.R. ch. 115, BACT]

E. Compliance Demonstration

1. Compliance with the PM, PM_{10}, and $PM_{2.5}$ lb/ODT and lb/hr emission limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every other calendar year thereafter. Performance testing shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Methods 201/201A and 202 or other methods approved by the Department. [06-096 C.M.R. ch. 115, BACT]

2. Except as noted above, compliance with the visible emissions standards shall be demonstrated pursuant to the requirements of 40 C.F.R. Part 60, Subpart Db. [06-096 C.M.R. ch. 115, BACT]

3. Upon request by the Department, Godfrey shall demonstrate compliance with the SO_2 lb/hr emission limit through performance testing conducted in accordance with an appropriate test method as approved by the Department. [06-096 C.M.R. ch. 115, BACT]

4. Compliance with the NO_x lb/hr emission limit shall be demonstrated through use of a CEMS which meets the performance specifications of 40 C.F.R. Part 60, Appendix B and F, 40 C.F.R. Part 75, Appendix A and B, and 06-096 C.M.R. ch. 117, as applicable. [06-096 C.M.R. ch. 117, § 1(B)(2)]

5. Upon request by the Department, Godfrey shall demonstrate compliance with the NO_x lb/ODT emission limit through performance testing conducted in accordance with an appropriate test method as approved by the Department. [06-096 C.M.R. ch. 115, BACT]

6. Compliance with the CO lb/ODT and lb/hr emission limits shall be demonstrated through performance testing conducted within 180 days of initial startup. Subsequent performance tests shall be performed upon request by the Department. Performance testing shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Method 10 or other method approved by the Department. [06-096 C.M.R. ch. 115, BACT]

7. Compliance with the VOC lb/ODT and lb/hr emission limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every

five calendar years thereafter. Performance testing shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Methods 25 or 25A or other method approved by the Department. [06-096 C.M.R. ch. 115, BACT]

F. Parameter Monitoring

1. Godfrey shall monitor RTOs #1 and #2 pursuant to the most current version of 40 C.F.R. Part 63, Subpart DDDD. [06-096 C.M.R. ch. 115, BACT]

2. During all operating times, Godfrey shall continuously operate, record data, and maintain records from the following parameter monitors:

   a. Secondary voltage for WESPs #1 and #2;
   b. Secondary current for WESPs #1 and #2; and
   c. Liquid flow rate for WESPs #1 and #2.

   [06-096 C.M.R. ch. 115, BACT]

G. Periodic Monitoring

Godfrey shall operate, record data, and maintain records from the following periodic monitoring items for Furnaces/Dryers #1 and #2:

1. Date, time, and duration of each bake-out event including the start/end times of the warm-up cycle; [06-096 C.M.R. ch. 115, BACT]
2. Records of Method 9 observations conducted during each bake-out event including date, time, and results; [06-096 C.M.R. ch. 115, BACT]
3. Records of any inspections, malfunctions, and maintenance activities performed (planned or unplanned) on the WESPs #1 and #2 or RTOs #1 and #2; [06-096 C.M.R. ch. 115, BACT]
4. The date, time, and duration for all instances when either Bypass Stack #1 or #2 is used based on bypass stack damper position . These records shall include the reason the emergency bypass stack was used and any corrective action taken. [06-096 C.M.R. ch. 115, BACT]

(18) **TOS Backup Heater**

A. Godfrey shall fire only natural gas in the TOS Backup Heater. [06-096 C.M.R. ch. 115, BACT]

B. The TOS Backup Heater shall not exceed an annual operating limit of 500 hr/year on a 12-month rolling total basis. Godfrey shall keep records of all operating times for the TOS Backup Heater on a monthly and 12-month rolling total basis.
[06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
TOS Backup Heater	PM	0.05	06-096 C.M.R. ch. 115, BACT

D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
TOS Backup Heater	2.50	2.50	2.50	0.03	2.45	4.12	0.27

E. Visible emissions from the TOS Backup Heater shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

F. Upon request by the Department, Godfrey shall demonstrate compliance with the emission limits and visible emissions standard above through performance testing conducted in accordance with an appropriate test method as approved by the Department. [06-096 C.M.R. ch. 115, BACT]

(19) **Press #1**

A. Godfrey shall fire only natural gas in RTO #3. [06-096 C.M.R. ch. 115, BACT]

B. Control Equipment

1. Godfrey shall operate and maintain a wet scrubber on Press #1 for control of particulate matter during all times Press #1 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

2. Godfrey shall operate and maintain an RTO (RTO #3) on Press #1 for control of VOC during all times Press #1 is operating except during safety-related shutdowns and commissioning. [06-096 C.M.R. ch. 115, BACT]

3. The maximum combined heat input to RTO #3 shall not exceed 30.5 MMBtu/hr demonstrated by records from the manufacturer showing the burner size and/or maximum fuel flow. [06-096 C.M.R. ch. 115, BACT]

4. Emissions from Press #1 shall exhaust through Stack #2. The exhaust from Stack #2 shall be at least 150 feet above ground level and no more than 7.25 feet in diameter. [06-096 C.M.R. ch. 115, BACT]

C. Emission Limits

Emission limits are on a 1-hour block average unless otherwise stated. These limits apply at all times except during safety-related shutdowns and commissioning as described in this license.

1. Emissions from Press #1 shall not exceed the following:
[06-096 C.M.R. ch. 115, BACT]

Unit	PM ($lb/MSF_{3/8}$)	PM_{10} ($lb/MSF_{3/8}$)	$PM_{2.5}$ ($lb/MSF_{3/8}$)	NO_x ($lb/MSF_{3/8}$)	CO ($lb/MSF_{3/8}$)	VOC ($lb/MSF_{3/8}$)
Press #1	0.063	0.063	0.063	0.27	0.22	0.066

2. Emissions from Press #1 shall not exceed the following:
[06-096 C.M.R. ch. 115, BACT]

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Press #1	10.00	10.00	10.00	0.02	43.20	35.20	10.56

D. Visible Emissions

1. Visible emissions from Stack #2 shall not exceed 20% opacity on a 6-minute block average basis, except for periods of commissioning, startup, shutdown, malfunction, or RTO bake-out. [06-096 C.M.R. ch. 115, BACT]

2. During periods of startup, shutdown, or malfunction, visible emissions from Stack #2 shall not exceed 40% opacity on a 6-minute block average basis. This alternative visible emissions standard shall not be utilized for more than two hours (20 consecutive 6-minute block averages) per event. Godfrey shall keep records sufficient to document the date, time, and duration of each event. Compliance with the visible emissions limit during these periods shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9, upon request by the Department. [06-096 C.M.R. ch. 115, BACT]

3. During periods of RTO bake-out, Godfrey must either meet the visible emission limits above or meet the following work practice standards and alternative visible emissions standard:

   a. Godfrey shall keep records sufficient to document the date, time, and duration of each event;

   b. Bake-out events shall not occur while either Furnace #1 or Furnace #2 are operating;

c. Bake-out events (where work practice standards are utilized) shall not occur more frequently than six times per calendar year;

d. Once the RTO chamber is at temperature for bake-out to begin, the duration of each bake-out event shall not exceed three hours; and

e. During the bake-out event, visible emissions shall not exceed 60% opacity on a 6-minute block average basis.

[06-096 C.M.R. ch. 115, BACT]

4. Compliance with the alternative visible emission limit during RTO bake-out shall be demonstrated by conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9. Observations shall be started within 20 to 30 minutes after the end of the warm-up cycle and shall be conducted for at least 18 consecutive minutes. [06-096 C.M.R. ch. 115, BACT]

E. Compliance Demonstration

1. Compliance with the PM, PM_{10}, and $PM_{2.5}$ lb/$MSF_{3/8}$ and lb/hr emission limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every other calendar year thereafter. Performance testing shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Method 5 or Methods 201/201A and 202, as applicable, or other methods approved by the Department. [06-096 C.M.R. ch. 115, BACT]

2. Except as noted above, Godfrey shall demonstrate compliance with the visible emissions standard upon request by the Department in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 or other method approved by the Department. [06-096 C.M.R. ch. 115, BACT]

3. Upon request by the Department, Godfrey shall demonstrate compliance with the SO_2, NO_x, and CO emission limits through performance testing conducted in accordance with an appropriate test method as approved by the Department. [06-096 C.M.R. ch. 115, BACT]

4. Compliance with the VOC lb/$MSF_{3/8}$ and lb/hr emission limits shall be demonstrated through performance testing conducted within 180 days of initial startup and every five calendar years thereafter. Performance testing shall be conducted in accordance with 40 C.F.R. Part 60, Appendix A, Methods 25 or 25A or other method approved by the Department. [06-096 C.M.R. ch. 115, BACT]

F. Parameter Monitoring

1. Godfrey shall monitor RTO #3 pursuant to the most current version of 40 C.F.R. Part 63, Subpart DDDD. [06-096 C.M.R. ch. 115, BACT]

2. During all operating times, Godfrey shall continuously operate, record data, and maintain records from the following parameter monitors:

   a. Liquid pressure for the wet scrubber; and
   b. Liquid flow rate for the wet scrubber.

   [06-096 C.M.R. ch. 115, BACT]

G. Periodic Monitoring

Godfrey shall operate, record data, and maintain records from the following periodic monitoring items for Press #1:

1. Date, time, and duration of each bake-out event including the start/end times of the warm-up cycle; [06-096 C.M.R. ch. 115, BACT]
2. Records of Method 9 observations conducted during each bake-out event including date, time, and results; and [06-096 C.M.R. ch. 115, BACT]
3. Records of any inspections, malfunctions, and maintenance activities performed (planned or unplanned) on the wet scrubber or RTO #3. [06-096 C.M.R. ch. 115, BACT)]

(20) **Edge Seal Spray Booth**

A. The Edge Seal Spray Booth shall be equipped with particulate filters and vent inside the building. [06-096 C.M.R. ch. 115, BACT]

B. Emissions of VOC from the Edge Seal Spray Booth shall not exceed 1.0 tpy. Godfrey shall keep records of the amount and VOC content (by weight) of all coatings used in the Edge Seal Spray Booth. [06-096 C.M.R. chs. 115 and 137]

(21) **Material Handling**

A. Emissions of particulate matter from the Green End Dust Collection System, Dry Dust Collection System, Resonated Dust Collection System, and Finishing Area Dust Collection Systems each shall be controlled by the operation and maintenance of baghouses designed to achieve a control efficiency of greater than 99%. [06-096 C.M.R. ch. 115, BACT]

B. Visible emissions from the material handling baghouses each shall not exceed 10% opacity on a 6-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following:
[06-096 C.M.R. ch. 115, BACT]

Equipment	$PM/PM_{10}/PM_{2.5}$ (lb/hr)
Green End Dust Collection System	0.01
Dry Dust Collection System	0.02
Resonated Dust Collection System	0.02
Finishing Area Dust Collection System	0.27 (all 3 baghouses combined)

D. Compliance with the lb/hr particulate matter emission and visible emissions limit shall be demonstrated through performance testing conducted upon request by the Department. [06-096 C.M.R. ch. 115, BACT]

(22) **Commissioning**

A. To allow for commissioning, the following requirements do not apply until 90 days from first fire in one of the furnaces:

1. Use of the emergency bypass stacks on Furnaces #1 and #2 only during emergency situations;
2. Operation of the pollution control equipment associated with Furnaces #1 and #2;
3. Emission limits for Furnaces #1 and #2 and visible emissions standards for Stack #1; and
4. Continuous monitoring of NO_x from Furnaces #1 and #2 (i.e., use of a NO_x CEMS).

B. To allow for commissioning, the following requirements do not apply until initial startup of the facility as defined in Subpart DDDD:

1. Operation of the pollution control equipment associated with Furnaces/Dryers #1 and #2 and Press #1; and
2. Emission limits for Furnaces/Dryers #1 and #2 and Press #1 and visible emissions standards for Stacks #1 and #2.

C. Godfrey shall notify the Department in writing of the date of first fire in each furnace and the date of initial startup of Dryer #1, Dryer #2, and Press #1 within 10 calendar days of each occurrence.

[06-096 C.M.R. ch. 115, BACT]

(23) **Generator #1**

A. Godfrey shall keep records of all maintenance conducted on the engine associated with Generator #1 [06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.12	06-096 C.M.R. ch. 115, BACT

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.60	0.60	0.60	0.01	16.00	4.25	0.45

D. Visible Emissions

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. Godfrey shall have available for review by the Department a copy of the manufacturer's emission-related written instructions for engine operation and maintenance. [06-096 C.M.R. ch. 115, BACT]

(24) **Parameter Monitors**

If any parameter monitor is recording accurate and reliable data less than 98% of the source-operating time within any quarter of the calendar year, the Department may initiate enforcement action. The Department may include in that enforcement action any period of time that the parameter monitor was not recording accurate and reliable data during that quarter unless the licensee can demonstrate to the Department's satisfaction that the failure of the system to record such data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions. [06-096 C.M.R. ch. 115, BACT]

(25) **Performance Test Protocol**

For any performance testing required by this license, Godfrey shall submit to the Department for approval a performance test protocol, as outlined in the Department's Performance Testing Guidance, at least 30 days prior to the scheduled date of the performance test. [06-096 C.M.R. ch. 115, BACT]

(26) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, Godfrey may be required to submit additional information. Upon written request from the Department, Godfrey shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.
[06-096 C.M.R. ch. 115, § 2(O)]

The Conditions below are applicable requirements added to this NSR license to assist in understanding requirements that are unrelated to New Source Review. These conditions shall expire from this NSR License upon incorporation of these conditions as Applicable requirements through issuance of Godfrey's initial Part 70 license.

(27) **Furnaces/Dryers #1 and #2**

A. Periodic Monitoring

Godfrey shall operate, record data, and maintain records from the following periodic monitoring items for Furnaces/Dryers #1 and #2:

1. Hours of operation on a monthly and calendar year basis; [06-096 C.M.R ch. 137]
2. Amount (tons) of fuel fired in Furnaces #1 and #2 (each) on a monthly and calendar year basis; [06-096 C.M.R. ch. 137]
3. Amount (scf) of natural gas fired in RTOs #1 and #2 on a monthly and calendar year basis; [06-096 C.M.R. ch. 137]
4. Tons of oven-dried material through each dryer on a monthly and calendar year basis; [06-096 C.M.R. ch. 137]

B. New Source Performance Standards

Godfrey shall comply with all requirements of 40 C.F.R. Part 60, Subpart Db applicable to Furnaces #1 and #2 including, but not limited to, the following:

1. Standards

Furnaces #1 and #2 each shall not exceed a PM emission limit of 0.030 lb/MMBtu. This standard applies at all times except for periods of startup, shutdown, and malfunction. [40 C.F.R. §§ 60.43b(g), 60.43b(h)(1) and 60.46b(a)]

2. Testing Requirements

   a. Godfrey shall conduct initial performance testing on Furnaces #1 and #2 (each) to demonstrate compliance with the PM lb/MMBtu emission limit within 60 days of achieving maximum production but not later than 180 days after initial startup. Subsequent performance tests shall be conducted upon request by the Department. [40 C.F.R. §§ 60.8 and 60.46b(d)]

   b. Godfrey shall conduct performance testing either by using 40 C.F.R. Part 60, Appendix A, Method 5 (or other method approved by the Department) or by installing, calibrating, maintaining, and operating a CEMS for monitoring PM emissions (PM CEMS) from Stack #1. [40 C.F.R. §§ 60.46b(d) and 60.46b(j)]

   c. If Godfrey elects to monitor emissions by operating a PM CEMS, Godfrey shall comply with the requirements of 40 C.F.R. § 60.46b(j)(1) through (14). [40 C.F.R. § 60.46b(j)]

3. Visible Emissions

   If a PM CEMS is not operated, Godfrey shall comply with the following requirements.

   a. Godfrey shall conduct initial performance testing on Stack #1 for Furnace #1 and Furnace #2 (each) to demonstrate compliance with the visible emissions limit within 60 days of achieving maximum production but not later than 180 days after initial startup. [40 C.F.R. §§ 60.8 and 60.46b(d)]

   b. Godfrey shall conduct performance testing using 40 C.F.R. Part 60, Appendix A, Method 9. [40 C.F.R. § 60.46b(d)(7)]

   c. If Godfrey elects to monitor emissions from Furnaces #1 and #2 by operating a COMS, subsequent performance tests shall be conducted upon request by the Department. [40 C.F.R. § 60.46b(d)]

   d. If Godfrey elects to monitor emissions from Furnaces #1 and #2 by operating an ESP predictive model, subsequent performance tests for visible emissions shall be conducted in accordance with the schedules in 40 C.F.R. §§ 60.48b(a)(1), (2), or (3), as applicable. For subsequent performance tests, the observation period may be reduced from three hours to 60 minutes if all 6-minute averages are less than 10% opacity and all individual 15-second observations are less than or equal to 20% opacity during the initial 60 minutes of observations. [40 C.F.R. § 60.48b(a)]

4. Monitoring Requirements

   a. Pursuant to 40 C.F.R. § 60.48b(a), Godfrey shall install, calibrate, maintain, and operate one of the following and record the output of the system.

      (1) A COMS on Stack #1; [40 C.F.R. § 60.48b(a)]
      or
      (2) A PM CEMS for each furnace/dryer exhaust stream; [40 C.F.R. §60.48b(j)(1)]
      or
      (3) An ESP predictive model for each furnace/dryer exhaust stream operated in accordance with 40 C.F.R. § 60.48Da(o)(3). [40 C.F.R. § 60.48b(j)(6)]

   b. If Godfrey elects to monitor emissions by operating a COMS, the span value for the COMS shall be between 60 and 80 percent. [40 C.F.R. § 60.48b(e)(1)]

   c. If Godfrey elects to monitor emissions by operating a PM CEMS, the PM CEMS shall be operated and data recorded during all periods of operation except for CEMS breakdowns and repairs. Data must be recorded during calibration checks and zero span adjustments. [40 C.F.R. § 60.48b(k)]

5. Recordkeeping

   a. Godfrey shall maintain records of the amounts of fuel combusted in each furnace during each calendar month. [40 C.F.R. § 60.49b(d)(2)]

   b. If Godfrey elects to monitor emissions by using either a COMS or an ESP predictive model, Godfrey shall maintain records of opacity. [40 C.F.R. § 60.49b(f)]

   c. If Godfrey elects to monitor emissions by operating a COMS, Godfrey shall maintain the records specified in 40 C.F.R. § 60.49b(f)(1) through (3). [40 C.F.R. § 60.49b(f)]

   d. All records required by 40 C.F.R. Part 60, Subpart Db shall be maintained for a period of 2 years following the date of the record. [40 C.F.R. § 60.49b(o)]

      Note: Standard Condition (8) requires records to be maintained for a minimum of six years.

6. Notifications and Reporting

   a. Godfrey shall submit notification to the Department and EPA of the date of initial startup. The notification shall include:

      (1) The design heat input capacity of each furnace and identification of the fuel to be fired; and
      (2) The annual capacity factor at which Godfrey anticipates operating the facility.

      [40 C.F.R. § 60.49b(a)]

   b. Godfrey shall submit to the Department and EPA results of the initial performance tests and the performance evaluation of the PM CEMS, as applicable. [40 C.F.R. § 60.49b(b)]

   c. If Godfrey elects to monitor emissions by using either a COMS or an ESP predictive model, Godfrey shall submit excess emission reports for any excess emissions that occurred during the reporting period. Excess emissions are defined as all 6-minute periods during which the average opacity exceeds the standard. [40 C.F.R. § 60.49b(h)]

      The reporting period for excess emission reports is each six-month period (i.e., semiannually). All reports shall be submitted to EPA and to the Department and shall be postmarked by the 30th day following the end of the reporting period. [40 C.F.R. § 60.49b(w)]

   d. Godfrey may submit electronic quarterly reports in lieu of written semiannual reports. The format of the quarterly electronic report shall be coordinated with the Department. Any electronic report shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement indicating whether compliance with the applicable emission standards and minimum data requirements was achieved during the reporting period. Before submitting reports using an electronic format, Godfrey shall coordinate with the Department to obtain agreement to submit reports in this alternative format. [40 C.F.R. § 60.49b(v)]

(28) **TOS Backup Heater**

A. New Source Performance Standards

Godfrey shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to the TOS Backup Heater including, but not limited to, the following:

1. Godfrey shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up of the TOS Backup Heater. This notification shall include the unit's design heat input capacity and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]

2. Godfrey shall maintain records of the amounts of natural gas combusted in the TOS Backup Heater during each calendar month. [40 C.F.R. § 60.48c(g)]

B. National Emission Standards for Hazardous Air Pollutants

Godfrey shall comply with all requirements of 40 C.F.R. Part 63, Subpart DDDDD applicable to the TOS Backup Heater including, but not limited to, the following:

1. Continuous Compliance

At all times, Godfrey must operate and maintain the TOS Backup Heater, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 C.F.R. § 63.7500(a)(3)]

2. Work Practice Standards

a. Godfrey shall perform tune-ups every five years on the TOS Backup Heater as specified in §§ 63.7540(a)(10)(i) through (vi). The first tune-up shall be conducted no later than 61 months from initial startup. Each subsequent tune-up shall be conducted no more than 61 months after the previous tune-up. The burner inspection specified in § 63.7540(a)(10)(i) may be delayed until the next scheduled or unscheduled unit shutdown, but Godfrey must inspect the burner at least once every 72 months. [40 C.F.R. §§ 63.7515(d), 63.7540(a)(12), and Table 3, Row 1]

b. If the TOS Backup Heater is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 C.F.R. § 63.7540(a)(13)]

3. Recordkeeping

a. Godfrey shall keep fuel use records for the days the TOS Backup Heater operates. [40 C.F.R. § 63.7525(k)]

b. Records shall be kept for a period of five years. [40 C.F.R. § 63.7560(b)]

Note: All records must be kept for a period of six years pursuant to Standard Condition (8).

c. Records shall be kept on-site, or be accessible from on-site, for at least two years. Records may be kept off site for the remaining years. [40 C.F.R. § 63.7560(c)]

4. Reports

a. Godfrey shall submit compliance reports that contain the information in 40 C.F.R. §§ 63.7550(c)(5)(i) through (iv), (xiv), and (xvii) every five years. [40 C.F.R. §§ 63.7550(a) and (b) and Table 9, Row 1]

b. The compliance report must be postmarked no later than January 31st of the year following the applicable five-year period covered by the report. [40 C.F.R. § 63.7550(b)]

(29) **Press #1**

Godfrey shall operate, record data, and maintain records from the following periodic monitoring items for Press #1:

A. Hours of operation for Press #1 on a monthly and calendar year basis; [06-096 C.M.R ch. 137]
B. Square feet of finished product on a 3/8-inch basis on a monthly and calendar year basis; [06-096 C.M.R. ch. 137]
C. Amount (scf) of natural gas fired in RTO #3 on a monthly and calendar year basis; [06-096 C.M.R. ch. 137]

(30) **40 C.F.R. Part 63, Subpart DDDD**

Godfrey shall comply with all applicable requirements of 40 C.F.R. Part 63, Subpart DDDD including, but not limited to, the following:

A. Emission Limits and Operating Requirements

1. The exhaust from Dryers #1 and #2 and Press #1 must comply with **one** of the following emission limits during all operating times except for periods of process unit or control device startup, shutdown, and malfunction:

Pollutant	Emission Limit
Total Hydrocarbon (THC)	Reduce emissions by 90%
Total Hydrocarbon (THC)	20 ppmdv (as carbon)
Methanol	Reduce emissions by 90%
Methanol	1 ppmvd if uncontrolled emissions entering control device are greater than or equal to 10 ppmvd
Formaldehyde	Reduce emissions by 90%
Formaldehyde	1 ppmvd if uncontrolled emissions entering control device are greater than or equal to 10 ppmvd

[40 C.F.R. §§ 63.2240(b), 63.2250(f), and Table 1B]

2. The 3-hour block average firebox temperature for RTOs #1, #2, and #3 each shall be maintained above the minimum temperature established during its most recent performance test. Godfrey shall be in compliance with these operating requirements during all operating times except for periods prior to initial startup and during safety-related shutdowns conducted according to the work practice requirements of Table 3, Row 6. [40 C.F.R. §§ 63.2240(b), 63.2250(f), and Table 2, Row 1]

3. The capture device on Press #1 must either meet the definition of wood products enclosure in 40 C.F.R. § 63.2292 or achieve a capture efficiency of 95% or greater. [40 C.F.R. § 63.2240(b)]

4. Godfrey shall minimize the length of time when compliance options and operating requirements are not met due to safety-related shutdowns. [40 C.F.R. § 63.2250(f)(5)]

5. Godfrey shall always operate and maintain the affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 C.F.R. Part 63, Subpart DDDD. The general duty to minimize emissions does not require Godfrey to make any further efforts to reduce emissions if levels

required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 C.F.R. § 63.2250(g)]

B. Work Practice Requirements

1. The Edge Seal Spray Booth shall use only non-HAP coatings.
[40 C.F.R. § 63.2241(a) and Table 3, Row 5]

   Non-HAP coatings are defined as coatings with HAP contents below 0.1% by mass for Occupational Safety and Health Administration (OSHA)-defined carcinogens as specified in 29 C.F.R. § 1910.1200, Appendix A, § A.6.4 and below 1.0% by mass for other HAP compounds. [40 C.F.R. § 63.2292]

2. During safety-related shutdowns, Godfrey shall follow documented site-specific procedures such as use of automated controls or other measures that have been developed to protect workers and equipment to ensure that the flow of raw materials (such as furnish or resin) and fuel or process heat (as applicable) ceases and that material is removed from the process unit(s) as expeditiously as possible given the system design to reduce air emissions. Godfrey shall make a record of safety-related shutdown procedures available for inspection by the Department upon request. [40 C.F.R. § 63.2250(f)(6), Table 3, Row 6, and Table 6, Row 6]

C. Initial Compliance Demonstration

1. Godfrey shall conduct initial performance tests and establish the minimum firebox temperatures for RTOs #1, #2, and #3 (each) no later than 180 calendar days after initial startup. [40 C.F.R. §§ 63.2260(a) and 63.2261(a)]

2. Performance tests shall be conducted pursuant to 40 C.F.R. § 63.2262 and Table 4. [40 C.F.R. § 63.2260(a)]

3. Godfrey shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 C.F.R. § 63.2280(d). [40 C.F.R. § 63.2260(c)]

4. Godfrey shall submit documentation that the enclosure on Press #1 meets the enclosure design criteria in 40 C.F.R. § 63.2292 or the results of a capture efficiency verification with the Notification of Compliance Status. [40 C.F.R. §§ 63.2260(b), 63.2267, and Table 5, Row 6]

5. Godfrey shall submit a signed statement with the Notification of Compliance Status that it is using non-HAP coatings in the Edge Seal Spray Booth.
[40 C.F.R. § 63.2260(b) and Table 6, Row 5]

6. Godfrey shall conduct initial compliance demonstrations that do not require performance tests (i.e., meet the requirements to use non-HAP coatings and follow site-specific procedures for safety-related shutdowns) no later than 30 calendar days after initial startup. [40 C.F.R. § 63.2261(b)]

D. Continuous Compliance and Monitoring

1. Godfrey shall conduct repeat performance tests using the applicable methods specified in Table 4 within 60 months of the previous performance test.
[40 C.F.R. § 63.2271(a) and Table 7, Row 7]

2. Godfrey shall operate the following continuous parameter monitoring systems (CPMS):

Equipment	CPMS
RTO #1	Firebox Temperature
RTO #2	Firebox Temperature
RTO #3	Firebox Temperature

[40 C.F.R. § 63.2271(a) and Table 7, Row 1]

3. Each CPMS shall be installed, operated, and maintained according to the following:

   a. The CPMS must be capable of completing a minimum of one cycle of operation for each successive 15-minute period.
   b. At all times, Godfrey shall maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
   c. Godfrey shall maintain records of the results of each inspection, calibration, and validation check.
   d. Temperature sensors shall be located in a position that provides a representative temperature.
   e. Temperature sensors shall have a minimum accuracy of 4 °F or 0.75% of the temperature value, whichever is larger.
   f. If a chart recorder is used, it must have a sensitivity with minor divisions not more than 20 °F.
   g. Godfrey shall validate the temperature sensor's reading at least semiannually using the requirements of 40 C.F.R. § 63.2269(b)(4)(i), (ii), (iii), (iv), or (v).
   h. Godfrey shall conduct validation checks using the methods in 40 C.F.R. § 63.2269(b)(4) any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor.

i. At least quarterly, Godfrey shall inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.
[40 C.F.R. §§ 63.2269(a) and (b)]

4. Each CPMS shall be operated continuously during all operating times except for monitor malfunctions, associated repairs, and required quality assurance or control activities. For purposes of calculating data averages, Godfrey shall not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities. Godfrey shall use all data collected during all other periods of operation. [40 C.F.R. § 63.2270(b)]

5. Godfrey shall not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities or data recorded during periods of safety-related shutdown in data averages and calculations used to report emission or operating levels, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. Godfrey shall use all the data collected during all other periods in assessing the operation of the control system.
[40 C.F.R. § 63.2270(c)]

6. Godfrey shall determine the 3-hour block average of all recorded readings calculated after every 3 hours of operation as the average of the evenly spaced recorded readings in the previous 3 operating hours (excluding periods described previously). To calculate the data averages for each 3-hour averaging period, Godfrey must have at least 75% of the required recorded readings for that period using only recorded readings that are based on valid data. [40 C.F.R. §§ 63.2270(d) and (f)]

E. Recordkeeping

1. Records shall be kept for a period of 5 years. [40 C.F.R. § 63.2283(b)]

   Note: Standard Condition (8) requires records to be maintained for a minimum of six years.

2. Records shall be kept on site, or be accessible from on site, for at least 2 years. Records may be kept off site for the remaining years. [40 C.F.R. § 63.2283(c)]

3. Any records that are submitted electronically through EPA's Compliance and Emissions Data Reporting Interface (CEDRI) may be maintained in electronic format. Godfrey shall make any such records, data, and reports available to the Department or EPA upon request, including as part of an on-site compliance evaluation. [40 C.F.R. § 63.2283(d)]

4. Godfrey shall maintain records in accordance with 40 C.F.R. Part 63, Subpart DDDD including, but not limited to, the following:

   a. Copies of notifications and reports submitted to comply with the subpart along with any supporting documentation; [40 C.F.R. § 63.2282(a)(1)]
   b. The records in §§ 63.2282(a)(2)(i) through (iv) related to startup, shutdown, failures to meet the standard, and actions taken to minimize emissions. [40 C.F.R. § 63.2282(a)(2)]
   c. Records demonstrating that only non-HAP coatings are used in the Edge Seal Spray Booth; [40 C.F.R. § 63.2271(a) and Table 8, Row 5]
   d. Records of the safety-related shutdown procedures available for inspection by the Department upon request; [40 C.F.R. § 63.2271(a) and Table 8, Row 6]
   e. Records of performance tests and performance evaluations; and [40 C.F.R. § 63.2282(a)(4)]
   f. All CPMS data. [40 C.F.R. § 63.2282(b)]

F. Notifications and Reports

Godfrey shall submit to the Department and EPA all notifications and reports required by 40 C.F.R. Part 63, Subpart DDDD including, but not limited to, the following:

1. Godfrey shall submit an Initial Notification no later than 120 calendar days after initial startup. The Initial Notification shall be submitted through CEDRI. [40 C.F.R. § 63.2280(b)]

2. Godfrey shall submit written notification to the Department and EPA of intent to conduct a performance test at least 60 days before the performance test is scheduled to begin. [40 C.F.R. § 63.2280(c)]

3. Godfrey shall submit a Notification of Compliance Status for each subsequent performance test through CEDRI as specified in 40 C.F.R. §§ 63.2281(h), (k), and (l). The Notification of Compliance Status shall include a summary of the performance test results. [40 C.F.R. § 63.2280(d)]

4. The Notification of Compliance Status shall be submitted before the close of business on the 60th calendar day following the completion of the performance test. [40 C.F.R. § 63.2280(d)(2)]

5. Within 60 days of the date of completing each performance test, Godfrey must submit the results of the performance test following the procedures specified in 40 C.F.R. §§ 63.2281(i)(1) – (3). [40 C.F.R. §§ 63.2281(i)]

   Note: Standard Condition (11)(C) requires a written report of the performance test results be submitted to the Department within 30 days of the date of test completion.

6. Godfrey shall notify the Department and EPA within 30 days before taking any of the following actions:

   a. Modifying or replacing the control system for any process unit subject to the compliance options and operating requirements of this subpart; or
   b. Changing a continuous monitoring parameter or the value or range of values of continuous monitoring parameter for any process unit or control device.

   [40 C.F.R. §63.2280(g)]

7. Godfrey shall prepare and submit a compliance report every six months which contains the information contained in § 63.2281(c) through (e) as applicable. [40 C.F.R. § 63.2281(a) and Table 9, Row 1]

   The first compliance report must cover the period beginning on the date of initial startup and ending on June 30 or December 31 and lasting at least six months but less than 12 months. [40 C.F.R. § 63.2281(b)(1)]

   The first compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 or December 31, respectively. [40 C.F.R. § 63.2281(b)(2)]

8. Godfrey shall submit all subsequent compliance reports through CEDRI as specified in 40 C.F.R. §§ 63.2281(h), (k), and (l). [40 C.F.R. § 63.2281(b)(6)]

   Each subsequent compliance report must cover the semiannual period from January 1 through June 30 or July 1 through December 30, as applicable. [40 C.F.R. § 63.2281(b)(3)]

   Each subsequent compliance report is due no later than July 31 or January 31 for compliance periods ending on June 30 or December 31, respectively. [40 C.F.R. § 63.2281(b)(4)]

(31) **Generator #1**

Generator #1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

A. Manufacturer Certification
   The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in § 60.4202. [40 C.F.R. § 60.4205(b)]

B. Ultra-Low Sulfur Fuel
The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the fuel in the tank on-site. [40 C.F.R. § 60.4207(b)]

C. Non-Resettable Hour Meter
A non-resettable hour meter shall be installed and operated on the engine.
[40 C.F.R. § 60.4209(a)]

D. Annual Time Limit for Maintenance and Testing

1. As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours.
[40 C.F.R. § 60.4211(f)]

2. Godfrey shall keep records that include the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

E. Operation and Maintenance
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. Godfrey may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(32) **General Process Emissions**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(B)(4)]

(33) **Fugitive Emissions**

A. Godfrey shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

B. Godfrey shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

[06-096 C.M.R. ch. 101, § 4(C)]

(34) **Annual Emission Statement**

A. Godfrey is subject to emissions inventory requirements contained in *Emission Statements*, 06-096 C.M.R. ch. 137. Godfrey shall maintain records sufficient to complete and submit the annual emissions statement as required by this rule.

B. Every third year, or as requested by the Department, Godfrey shall report to the Department emissions of hazardous air pollutants as required pursuant to 06-096 C.M.R. ch. 137, § (3)(C). The next report is due no later than May 15, 2027, for emissions occurring in calendar year 2026. The Department will use these reports to calculate and invoice for the applicable annual air quality surcharge for the subsequent three billing periods. Godfrey shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

(35) Godfrey shall submit an application for an initial Part 70 air emission license no later than 12 months from commencement of operation. [06-096 C.M.R. ch. 140 § 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 3rd DAY OF DECEMBER, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____ for
MELANIE LOYZIM, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 6/20/2024
Date of application acceptance: 6/24/2024

This Order prepared by Lynn Muzzey, Bureau of Air Quality.