



October 9, 2009

093-89603

DEP/DARM
South Permitting Section
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

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OCT 13 2009

BUREAU OF AIR REGULATION

Attention: Mr Al Linero, P.E.

**RE: Air Construction Permit Application
FBenergy Manatee Facility, LLC in Port Manatee, FL**

Dear Mr. Linero:

The FBenergy Manatee Facility, LLC is proposed as a power project in Port Manatee, Florida (the Project), which would use biomass to generate electricity. The proposed project will generate a nominal net 60 megawatts (MW) of electricity.

Biomass energy projects, such as the ones being proposed by FBenergy, represent an excellent opportunity for the State by providing a reliable, renewable energy source, as well as helping to curb the State's GHG emissions. In addition, projects such as this will help Florida's utilities meet Governor Crist's Executive Order No. 07-027, proposing a 20 percent renewable energy requirement.

This letter serves to transmit FBenergy's minor source air construction permit application for the proposed Port Manatee project. One original and three copies are enclosed. In addition, enclosed are application forms for an Acid Rain permit, a Certificate of Representation and a check for \$6,250 to cover the permit processing fee.

If you should have any questions regarding the enclosed application package, please don't hesitate to contact either Rick Jensen of FBenergy at (941) 567-1631 or me at (813) 287-1717. Thank you in advance for your timely processing of this application.

Sincerely,

GOLDER ASSOCIATES INC.

Scott Osbourn, P.E.
Associate and Senior Consultant

cc: Rick Jensen, FBE
Andrew Grant, FBE

Attachments

SO/PP/ev



Golder Associates Inc.
5100 W. Lemon Street, Suite 114
Tampa, FL 33609 USA
Tel: (813) 287-1717 Fax: (813) 287-1716 www.golder.com



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REPORT

AIR CONSTRUCTION PERMIT APPLICATION

Florida Biomass Energy LLC

Submitted To: Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400

On Behalf Of: Florida Biomass Energy LLC
9040 Town Center Parkway
Bradenton, FL 34202

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OCT 13 2009

BUREAU OF AIR REGULATION

Submitted By: Golder Associates Inc.
5100 W. Lemon Street
Suite 114
Tampa, FL 33609, USA

Distribution: 4 Copies — Florida Department of Environmental Protection
1 Copy — Florida Biomass Energy, LLC
1 Copy — Golder Associates Inc.

October 2009

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1.0 INTRODUCTION

To improve domestic energy sources and to address global climate change issues, the State of Florida is encouraging the expanded use of biomass-based energy, both for transportation needs and electrical generation. Governor Crist's Action Team on Energy and Climate Change has recommended that the State expand its biomass-based energy sources, citing several benefits including economic development, energy security, fuel diversity, and reliability as well as helping the State achieve its greenhouse gas (GHG) emissions reduction objectives. Biomass (which is a broad term covering various types of non-fossil organic material, such as agricultural crops and byproducts, landscape and yard trimmings, logging and lumber mill residues, untreated wood materials, etc.) is relatively abundant in Florida as well as the southeastern U.S., and is a proven, reliable source of renewable energy which can be considered carbon-neutral.

Florida Biomass Energy, LLC, (FBE) is proposing the FBenergy Manatee Facility, LLC (the Project), a biomass-based energy facility designed to provide approximately 60 megawatts (MW) of "green" electricity under a 20 year contract to a Florida utility. Wood waste (feedstock) locally sourced will be used to generate the electricity for the local grid. The feedstock will be transported to the site by truck. The Project's contract fuel processor will collect wood waste at several off-site locations, where the fuel is air-dried, then chipped before trucking to the Project site. The boiler technology is based on a grate/suspension design and is proposed to generate 560,000 lb/hour of steam at 1550 psi and 960 degrees F in a conventional waterwall boiler. Cooling water is proposed to be supplied by either onsite or other local sources. The site will need about 1.2 million gallons per day (MM gal/day) of cooling water

Biomass-based energy units such as the ones being proposed by FBE represent an excellent opportunity for the State by providing a reliable, renewable energy source, as well as helping to curb the State's GHG emissions. In addition, projects such as this will help Florida's utilities meet Governor Crist's Executive Order No. 07-027, which proposes a 20 percent renewable portfolio standard.

This application contains the information required by Florida Department of Environmental Protection (FDEP) Form No. 62-210.900(1), Effective: 3/16/08, Application for Air Permit — Long Form. This air application report is divided into the following major sections:

- Section 1.0 provides the Project introduction;
- Section 2.0 presents a description of the Project;
- Section 3.0 provides a description of individual emission units and controls;
- Section 4.0 provides a review of the air requirements applicable to the Project;
- Section 5.0 provides the results of the Project's air quality impact analysis; and
- Attachment: FDEP Form No. 62-210.900(1), Application for Air Permit — Long Form.

2.0 PROJECT DESCRIPTION

FBE is proposing to construct a biomass-based electrical generating power plant in Port Manatee. The proposed project will generate a nominal net 60 MW of electricity. Construction is proposed to commence in April 2010, with a proposed in-service date of April 2012.

The project consists of a biomass fuel "wood chips" delivery/handling system, the use of a grate-type suspension boiler, an air quality control system (AQCS), cooling towers, emergency generator, emergency fire water pump, and ancillary equipment. The emergency generator and fire water pump will be fueled with bio-diesel. The biomass fuel "wood chips" will be chipped to size and screened at a remote location. The fuel preparation process will be owned and operated by others. Biomass fuel will be delivered via truck to the site using a base 6-day week, 12 hour per day schedule to minimize traffic impact.

The AQCS will be comprised of a dry sorbent injection system for acid gas, sulfur dioxide (SO_2) and hydrochloric acid (HCl) control; a hot electrostatic precipitator (ESP) for particulate matter (PM) control; an oxidation catalyst (OXC) for carbon monoxide (CO) and volatile organic compound (VOC) control; and selective catalytic reduction (SCR) for nitrogen oxides (NO_x) control. A detailed discussion of these control systems is further described in Section 3.1 of this report.

At the power plant, the fuel delivery trucks will be unloaded via a truck receiving system equipped with two hydraulically operated truck dumpers. Fuel trucks will have an average net load of 25 tons of wood chips. The fuel is then conveyed, via an enclosed collecting conveyor, to the fuel storage pile. The fuel storage pile will contain 10 to 14 days of fuel storage.

From the fuel storage pile, the fuel will be conveyed to a magnetic separator/sizing screen and will then be transferred to the day-bins within the boiler structure.

2.1 Description of Emission Units

The following sections provide a more detailed discussion of the processes and emission units associated with the Project. The Project location and site map is provided in Figure 2-1. A proposed project site layout is presented in Figure 2-2. A process schematic of the entire process is provided in Figure 2-3, highlighting the emission points. Figures 2-4, 2-5, 2-6, and 2-7 provide more in-depth diagrams of the material handling operations.

2.1.1 Material Handling System Description

2.1.1.1 Stackout System

The feedstock material handling process associated with fuel delivery (stackout) is depicted in Figure 2-4. All wood waste material will be delivered to the project site via truck. The fuel trucks will have an average net load of 25 tons of wood chips. The truck receiving system will be equipped with two hydraulically

operated truck dumpers, which will slide each 25 ton load into a 50 ton capacity, fully-enclosed live-bottom receiving hopper. Each hopper will have a very slow moving chain drag to minimize dust. The hoppers will have a discharge rate capability of 150 tons per hour (TPH). From the bottom of the two collection hoppers, the wood chips will be discharged at a controlled rate, via an enclosed chute, onto a collecting conveyor. The collecting conveyor transfers the incoming fuel to a magnetic separator, sizing screen, and hog mill for reduction of oversize material. These components are mounted in a tower, which is equipped with dust collection hoods at transfer points, which convey emissions to a fabric filter to minimize dust. Separated ferrous metal is discharged by chute to a skip at grade for recycling. The combined streams from the sizing screen and the hog mill are then discharged onto a covered collection conveyor which feeds the stack-out system.

The stack-out system will provide approximately 20,000 tons of biomass storage, using a stacking system that continuously adjusts the height of the discharge just above the pile height, to minimize dust.

2.1.1.2 Reclaim System

The feedstock material handling process associated with fuel reclaim is depicted in Figure 2-5. Wood chips will be reclaimed from the storage pile via a drag chain or auger type reclaimer to a covered conveyor identified as Reclaim Conveyor No. 1. Reclaim Conveyor No. 1 will transfer the material to a second enclosed magnetic separator and sizing screen system and then transfer the screened fuel to the covered Supply Conveyor No. 2. The magnetic separator and sizing screen system will be controlled by a fabric filter. The covered reclaim conveyors are rated at 150 tons/hour. The anticipated average reclaim rate is estimated equal to 68 tons per hour based on a boiler heat input rate of 757 MMBtu/hr. Covered belt conveyors will then transport the feedstock to a storage silo (day bin) within the boiler structure. Particulate emissions from these transfer points are kept to a minimum through special designs. All conveyors will be covered to reduce particulate emissions. In addition, and as depicted in Figure 2-5, a fabric filter will control emissions from the day bin and from transfer of material from the day bin to the boiler.

2.1.1.3 Emergency Short-Term Fuel Feed System

The feedstock material handling process will also include an emergency short-term fuel feed system, as depicted in Figure 2-6. An at grade back-up emergency fuel storage area, located adjacent to the fuel truck access road, sufficient for an additional 30,000 tons of fuel, will be used in the event of major repairs to the stack out or reclaim systems. The emergency pile will be transferred to the truck dump hoppers via frontend loader and will utilize the enclosed by-pass conveyor to by-pass the stacker to transport the material directly to the boiler. The enclosed by-pass conveyor between the primary screening tower and the reclaim conveyor screening tower will enable the stack-out and reclaim systems to undergo routine maintenance without shutting down the boiler. The transfer points to and from this conveyor are covered by the same hoods and extraction systems that control dust from the screening towers. In developing

annual emissions for the project, an annual use of the emergency system equal to 2 weeks at 24 hours per day and 68 tons per hour was utilized.

2.1.1.4 Material Handling, Ash and Sorbent

The combustion of biomass in the proposed boiler will result in the formation of bottom ash and fly ash. The resultant amount of ash is a reflection of the ash in the fuel. Bottom ash will be collected from the boiler by a submerged drag-chain conveyor, which will deliver a wet material to the ash silo. The fly ash is the entrained exhaust particulate matter captured by the ESP. An enclosed conveyor or similar configuration will be used to transport the fly ash from the ESP to the ash storage silo. The storage silo will be equipped with a fabric filter for minimizing any PM emissions from the transfer operation. Ash from the storage silo will then loaded, via an ash conditioning mixer which produces a non-dusting material, to a truck for removal off-site.

Sorbent (Sodium Bicarbonate) will be delivered to the site via truck and will be unloaded to bicarbonate storage silos. The storage silos will be equipped with fabric filters for minimizing any PM emissions from the unloading process. The sorbent will then be injected to the dry sorbent injection control system.

The material handling systems for both the ash and sorbent streams described above are also depicted in Figure 2-7.

2.1.2 Power Generation

2.1.2.1 Biomass Fired-Boiler

FBE is developing a renewable energy facility to provide approximately 60 megawatts (MW) of electricity under a 20 year contract to a Florida utility. Wood waste (feedstock) locally sourced will be used to generate the electricity for the local grid. Power will be generated by a biomass-fired (wood) grate-type suspension boiler. The boiler will be rated at 757 MMBtu/hr and an annual heat input of 6,631,320 MMBtu/yr (based on 100% operating capacity). The average heat content of the fuel is estimated at approximately 5,600 MMBtu/lb (HHV).

The grate-type suspension boiler will generate 560,000 lb/hour of steam at 1,550 psi and 960 degrees F in conventional waterwall boiler tubes. The boiler will be equipped with start-up ignition burners using biodiesel fuel. Specifically, no fossil fuel is proposed to be used at the site. The boiler will be a top-mounted unit in which the boiler pressure parts are suspended from a steel structure and support grid. A roof and siding extending approximately 15 feet below the roof-line will protect the boiler equipment from rain. The boiler is complete with all necessary fans, economizers, air heaters, duct-work and controls, as well as steam soot-blowers.

A 133 ft stack will be located downstream of the final heat recovery equipment. The stack will be adjacent to the boiler structure and will include a dedicated platform for stack testing.

2.1.2.2 Steam Turbine

The steam cycle consists of a single steam turbine-generator, having a minimum of three extraction points at which steam at different pressures is extracted for regenerative heating of the boiler feed water, as well as stripping the feed water of dissolved oxygen in the de-aerator section to minimize corrosion. Feed water to the boiler economizer is supplied at 440 degrees F.

The steam turbine has an axial exhaust, and is equipped with a dedicated lube oil system, automatic governor for speed and load control, vibration monitoring sensors to protect its bearings and rotating blades, and safety monitoring equipment. It drives a close-coupled generator which shares the turbine's lube oil system. The generator is water-to-air-cooled by cooling water, as is the lube oil system.

Turbine exhaust steam, under vacuum at about 110°F, enters the condenser, where its heat is rejected to atmosphere by heating and evaporating water. From the condenser, turbine condensate is pumped through heat exchangers first to the de-aerator, and then by high pressure boiler feed water pumps to the boiler economizer to complete the cycle.

There are water losses from this cycle, partly from the boiler, where drum water is continuously "blown-down" to control solids in the boiler water and steam turbine, and partly from leakage and vents from the steam cycle.

Power output from the generator terminals at 13,800 volts is stepped up to 138,000 volts in the main transformer before being sent by overhead lines to FP&L's nearby Buckeye substation. A fenced switchyard encloses this transformer, and also the necessary circuit breaker, lightning arrestors, manual switches and revenue metering enclosure.

Power from the generator is also sent to the power plant's electrical distribution system, where it is transformed to 4 KV and 480 volts for use throughout the power plant.

2.1.3 Utilities and Infrastructure

2.1.3.1 Emergency Generator

A 500 KW emergency generator, and an associated uninterruptible power system (UPS), will provide power to critical systems in the event that connection with the utility grid is lost. No provision is made for starting the plant without first establishing a connection with the utility grid. The bio-diesel fueled emergency generator is rated at approximately 5 MMBtu/hr, and is estimated to operate for less than 500 hours per year.

2.1.3.2 Cooling Tower

Turbine exhaust steam, under vacuum at about 110 °F, enters the condenser, where its heat is rejected to atmosphere by heating and evaporating water. This process is accomplished in a condenser/cooling

tower combination, either a conventional separate condenser fed by cooling water from a cooling tower and circulating pumps, or in a wet surface evaporative condenser. In the latter equipment, the metal tubes upon which the turbine steam condenses are in direct contact with an air-water mixture at very close to the atmospheric wet bulb temperature, which achieves a slightly higher turbine output and efficiency than is possible with a conventional condenser/cooling tower. FBE is evaluating proposals for the alternates, which will have a minor impact upon cooling tower emissions.

2.1.3.3 Fire Water Pump

A non-electric fire water pump, in addition to a motor driven fire pump, will supply fire protection to the facility in the event of a "black plant". The bio-diesel fueled fire water pump is rated at approximately 250 kilowatts, and is estimated to operate no more than 250 hours per year.

3.0 PROPOSED SOURCE EMISSIONS AND CONTROLS

Estimated maximum hourly emissions, annual emissions and proposed control technology information representative of each emission unit during normal operation are provided in the following sections. Table 3-1 provides a summary of total project emissions, including hazardous air pollutants. Individual process units were described in detail in Section 2.0 of this report. The following is a summary listing of the process units considered in this emissions evaluation:

- Boiler;
- Material Handling (i.e., feedstock delivery, conveying and storage; fly ash and sorbent conveying and storage);
- Emergency Generator;
- Fire Water Pump; and
- Cooling Tower

The above-listed emission units can be located on Figure 2-3 (Overall Process Schematic).

3.1 Boiler

A summary of emission from the boiler are summarized in Table 3-2. Emission estimates for sulfuric acid mist (SAM) and halogens are summarized in Tables 3-3 and 3-4. Emission estimates for organic and metal HAPs are summarized in Table 3-5 and 3-6. Factors for hazardous air pollutants (HAPs) were evaluated based on EPA's AP-42.

The proposed boiler will utilize a combination of state-of-the-art control devices/techniques to minimize potential emissions of regulated air pollutants. A discussion of these devices/techniques, along with the air pollutant being controlled is provided below.

3.1.1 Dry Sorbent Injection

A dry in-duct sorbent injection system, which may utilize sodium bicarbonate (NaHCO_3) or trona as the injection sorbent material will be installed at the facility to control emissions of sulfur dioxide (SO_2) and hydrochloric acid (HCl). The sorbent will be stored in a silo with a bin vent for loading. The sorbent will be withdrawn from the bin and pneumatically conveyed to the flue duct upstream of the ESP. The flue gas temperature at this point will be approximately 600°F. The sorbent will mix with the flue gas and absorb SO_2 and HCl. A fuel analysis of several wood fuel sources, which may be utilized for the project, is provided in Appendix A. Fuel with a sulfur content of up to 0.07 percent is expected for the Project. The estimated uncontrolled SO_2 emissions are equal to 54 lb/hr, based on a heat input of 757 MMBtu/hr, fuel heating value of 5,594 MMBtu/lb, and an average sulfur content of fuel equal to 0.02 percent based on an annual average. An injection rate of approximately 233 lb/hr of NaHCO_3 is estimated to reduce the uncontrolled SO_2 emission rate to achieve controlled emission rates of 12.11 lb/hr (0.016 lb/MMBtu or 53.1 TPY). This level of sorbent injection is also estimated to reduce HCl by 88 percent. Based on AP-42 Table 1.6-3 uncontrolled HCl emissions are estimated based on fuel analysis data equal to 0.026

lb/MMBtu, resulting in an uncontrolled HCl rate equal to 19.7 lb/hr. Therefore the controlled HCl emission rate is equal to 2.36 lb/hr and 9.83 TPY based on 100 percent capacity factor. The injection rate will be controlled to maintain the SO₂ emissions below 100 TPY and the HCl emissions below 10 TPY.

Hydrogen Fluoride (HF) emissions are also controlled by the sorbent injection system and are also estimated to be controlled at an efficiency of 88 percent. The estimated controlled emissions of HF are equal to 1.63E-4 lb/hr and 7.12E-4 TPY. Details of the HCl and HF emission estimates are provided in Table 3-4.

3.1.2 Electrostatic Precipitator (ESP)

An electrostatic precipitator will be utilized to control particulate matter emissions. Because ash components such as Sodium (Na), Potassium (K), Magnesium (Mg) and Calcium (Ca), which are more abundant in wood ash than coal ash, and certain trace metal components have a potential to poison both oxidation catalysts and SCR catalysts, reducing their service life, the ESP will be a "hot ESP" and placed prior to the SCR and oxidation catalyst. The ESP will be designed to achieve a PM/PM₁₀ emission rate equal to 0.01 lb/MMBtu or 7.6 lb/hr, based on EPA Method 5 testing. PM emission calculations are provided in Table 3-2.

The inorganic matter contains a number HAPs (metal HAPs), the most abundant of which is manganese (Mn). Based on AP-42, Table 1.6-4, the total inorganic HAP emissions after the ESP are expected to be 0.06 lb/hr (0.28 TPY). The highest individual metal HAP is lead, which is not assumed to be controlled by the ESP and is estimated equal to 0.04 lb/hr and 0.16 TPY. Table 3-6 provides the emission calculations for metal HAPs.

3.1.3 Oxidation Catalyst

Combustion of biomass results in the emissions of small quantities of CO and VOC. Carbon monoxide and volatile organic compounds will be controlled by use of an oxidation catalyst. The oxidation catalyst (OXC) will be designed to maintain CO emissions below 100 TPY and the organic hazardous air pollutants (HAP) level low enough to maintain total HAPs emissions below 25 TPY.

CO emissions will be controlled to a emission level equal to 0.0295 lb/MMBtu resulting in an emission rate equal to 22.3 lb/hr and 97.8 TPY. Uncontrolled organic HAPs are based on AP-42, Table 1.6-3 and the Project will achieve a control efficiency through the OXC equal to or greater than 75 percent to maintain total HAP emissions below 25 TPY. CO and organic HAP emission estimates are provided in Tables 3-2 and 3-5, respectively.

3.1.4 Selective Catalytic NO_x Reduction (SCR)

A selective catalytic reduction (SCR) system will be utilized to reduce NO_x emissions to less than 100 TPY. The SCR will be located immediately downstream of the OXC, in the same enclosure, where it will

operate at approximately 590°F. Ammonia (NH₃) will be injected into the cavity upstream of the SCR where it can mix with the flue gas prior to passing through the SCR catalyst. The NH₃ will be delivered as aqueous ammonia (19 percent). The SCR catalyst will be designed to achieve 0.02 lb/MMBtu with less than 10 ppm ammonia slip. The controlled NO_x emissions of 0.02 lb/MMBtu equate to 15.1 lb/hr and 66.3 TPY.

3.2 Material Handling System Description

A summary of the emission estimates from the material handling system are summarized in Table 3-7. Detailed emission tables including controls and control efficiency are provided in Appendix B. This component of the process operation is depicted on Figure 2-2. In addition, a more detailed process flow diagram of the handling system showing fugitive particulate emission points are presented in Figures 2-4, 2-5, 2-6 and 2-7.

As previously mentioned, woody biomass feedstock preparation will occur at a remote site that will be owned and operated by others. A detailed description of the material handling system is provided in Section 2.1.1.4. Any oversized materials will be directed to a magnetic separator, sizing screen, and hog mill for reduction of oversize. The hog and ancillary conveyors will be supported in a common tower with applicable chute work and dust collection with baghouse. Emissions are primarily associated with the transport and storage of the biomass feedstock on the site. The feedstock storage pile will utilize water suppression to control fugitive particulate emissions. The feedstock received will have been air-dried, and chipped to approximately minus 4 inches, minimizing the potential for fugitive dust. In addition, all conveying systems will be enclosed.

Fugitive emission factors for the various material handling operations were estimated in accordance with current EPA techniques as presented in AP-42 (EPA, 1995), fugitive dust background document (EPA, 1992), other historical EPA emission factors and equipment design information.

For batch drop operations such as conveyor transfer points, the total suspended particulate matter [PM (TSP)], PM₁₀ and PM_{2.5} emission factors for batch drop operations are defined in Section 13.2.4 of AP-42 by the equation:

$$E = k(0.0032) (U/5)^{1.3} / (M/2)^{1.4} \text{ lb/ton}$$

where: E=emission factor, lb/ton

k=particle size multiplier

U=mean wind speed [miles per hour (mph)]

M=material moisture content (percent)

The particle size multiplier, k , was based on the recommended multipliers of 0.74, 0.35 and 0.053 in developing the PM(TSP), PM₁₀ and PM_{2.5} emission estimates, respectively. Mean wind speed was obtained from the Local Climatological Data (2001 - 2005) from Sarasota FAA, which was 7.83 miles per hour.

For the Hog Mill, the emission factor from "Technical Guidance for Control of Industrial Process Fugitive Particulate Emissions", Table 2-43 Primary Crushing were utilized to estimate emissions.

A control efficiency for each source was based on EPA's fugitive dust background document (EPA, 1992), and information about the source. Historically, EPA emission factors tended to account for factors potentially affecting emissions. For example, the current EPA emission factor included drop height in the equation. Indeed, emissions were a direct relationship of $H/10$ where H was the height in feet in the equation: $UEF \text{ (lb/ton)} = k \times (0.0018) \times ((s/5) \times (U / 5) \times (H/10)) / [(M / 2)^2]$. A source that had a 10 foot drop would have 10 times the emissions than a source that had a 1 foot drop. While this is no longer used in the current EPA emission factors, the height of the drop does influence the amount of potential fugitive emissions. EPA in its background document still recognizes drop height as a mitigating factor (see Table 3-6 in EPA, 1992). In addition, the consideration for control of the various methods is judgmental based on the configuration of the source. For example, a total enclosed source would likely have no fugitive emissions. With larger openings, the potential for fugitive dust increases especially where a tunneling effect can occur. These factors were considered in assigning controls.

3.3 Emergency Generator and Fire Water Pump

A 500 kW emergency generator and 250 kW fire water pump engine will provide emergency operations for the facility. These units will be fueled exclusively with bio-diesel fuel, and estimated to operate for less than 500 and 250 hours per year, respectively. Emissions from the emergency generator and fire water pump are established based on the requirements of 40 CFR 60 Subpart IIII and AP-42. Emissions are provided in Tables 3-8 and 3-9. HAP emissions from the emergency generator and fire water pump are provided in Table 3-10.

3.4 Cooling Towers

For particulate emission estimates, a traditional steam turbine heat exchanger (condenser) and cooling tower is assumed that employs a two-stage method for condensing the steam for both latent and sensible heat rejection. A circulating water flow rate of approximately 1,100 gpm is estimated for the Project. Cooling tower make-up water will be supplied from either onsite or other local sources. Particulate emissions from the cooling tower will be controlled by specifying drift eliminators that will result in a low drift rate equal to 0.01 percent.

Wet cooling towers provide direct contact between cooling water and air passing through the tower. Cooling tower drift is created when small amount of the cooling water becomes entrained in the air stream and carried out of the tower. PM emissions from cooling towers are related to the total dissolved solids (TDS) and amount of drift through the cooling tower. Drift eliminators are the control technology used to reduce the amount of drift and secondarily reduce the amount of PM emissions. The estimated PM, PM₁₀, and PM_{2.5} emissions from the proposed cooling towers are presented in Table 3-11.

3.5 Site Layout, Structures, and Stack Sampling Facilities

A plot plan of the proposed project was previously presented in Figure 2-2 (Project Site Layout). The approximate dimensions of the buildings and structures are also presented in this figure. Stack sampling facilities will be constructed in accordance with Rule 62-297.310(6), F.A.C.

4.0 AIR QUALITY REVIEW REQUIREMENTS AND APPLICABILITY

The following discussion pertains to the federal, state, and local air regulatory requirements and their applicability to the Project. These requirements must be satisfied before the proposed facility can begin construction and/or operation.

The FDEP regulations require any new source to obtain an air permit prior to construction. New sources must meet the appropriate requirements and obtain the required permits and approvals for air pollution sources, including Prevention of Significant Deterioration (PSD) (if major), applicable New Source Performance Standards (NSPS), applicable National Emission Standards for Hazardous Air Pollutants (NESHAP), Permit to Construct, and Permit to Operate. The requirements for construction permits and approvals are contained in Rules 62-4.030, 62-4.050, 62-4.210, 62-210.300(1), and 62-212.400, F.A.C. Specific emission standards are set forth in Chapter 62-296, F.A.C., and 40 CFR Parts 60, 61, and 63.

FDEP has nonattainment provisions (Rule 62-212.500, F.A.C.) that apply to all major new facilities located in a nonattainment area. In addition, for major facilities that are located in an attainment or unclassifiable area, the nonattainment review procedures apply if the source or modification is located within the area of influence of a nonattainment area. The Project is located in Manatee County, which is classified as an attainment area for all criteria pollutants. Therefore, nonattainment new source requirements are not applicable. There are currently no local air quality regulations more stringent than those at the state level.

4.1 New Source Review (NSR) Requirements

Under federal and Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed, and a pre-construction permit issued. As Florida's EPA approved State Implementation Plan includes PSD regulations, the Florida FDEP has PSD approval authority.

A "major facility" is defined as any 1 of 28 named source categories that have the potential to emit 100 TPY or more or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under CAA. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. The Project is not classified as any of the listed 27 source categories; therefore, the threshold for a major facility classification is 250 TPY of any pollutant. The project emissions summary, presented in Table 3-1, indicates that all pollutants are below the applicable threshold.

4.2 New Source Performance Standards (NSPS)

The NSPS are national emission standards, 40 CFR 60, that apply to specific categories of new sources. As stated in the 1977 Clean Air Act Amendments, these standards "shall reflect the degree of emission

limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated.”

The following NSPS regulations were reviewed for their applicability to the proposed project:

- NSPS Subpart A – General Provisions;
- NSPS Subpart Db – Industrial, Commercial, Institutional Steam Generating units;
- NSPS Subpart IIII – Stationary Compression Ignition Internal Combustion Engines; and
- NSPS Subpart OOO – Nonmetallic Mineral Processing Plant.

4.2.1 NSPS 40 CFR 60 Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)

The proposed boiler will be an affected facility to which this subpart applies, as it will be constructed after June 19, 1984 and will have a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)). The proposed boiler will have an estimated maximum design heat input rate of 757 MMBtu/hr and the Project will produce a nominal 60 MW. The applicable emission standards of Subpart Db are as follows:

Particulate Matter

“(h)(1) Except as provided in paragraphs (h)(2), (h)(3), (h)(4), (h)(5), and (h)(6) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input”

“(f) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that can combust coal, oil, wood, or mixtures of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity...”

The PM and opacity standards apply at all times except during startup, shutdown, or malfunction. PM emissions from the project will meet or exceed the requirements of NSPS Subpart Db.

To determine compliance with the PM emission limits and opacity limits under §60.43b, the owner or operator of an affected facility shall conduct an initial performance test as required under §60.8, and shall

conduct subsequent performance tests as requested by the Administrator. Performance testing shall be performed for PM using EPA Method 5, 5B, or 17 of 40 CFR 60 Appendix A

The owner may elect to install and operate a continuous opacity monitor (COM) or elect performance testing using Method 9 of Appendix A in accordance with 60.48b (a)(1), (a)(2), or (a)(3) for compliance with the opacity standard.

The boiler will fire wood and will be equipped with start-up ignition burners using biodiesel fuel – no fossil fuel is used. Therefore the SO₂ and NO_x emission standards of Subpart Db are not applicable to the project.

4.2.2 NSPS Subpart IIII (Stationary Compression Ignition Internal Combustion Engines)

The emergency generator will be subject to the requirements of 40 CFR 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, published July 11, 2006 and effective on September 11, 2006. The format of the final standard is an output-based emission standard for PM, NO_x, CO, and non-methane VOC (NMHC) and tiered based on model year. The Project will comply with the NSPS. Applicable emission standards and emission calculations are presented in Table 3-8 and 3-9 for the emergency generator and fire water pump, respectively. The emergency generator and emergency fire water pump will use exclusively bio-diesel.

4.2.3 NSPS Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants)

The Project proposes to utilize sodium bicarbonate (NaHCO₃) or trona as the injection sorbent material at the facility to control emissions of Sulfur Dioxide (SO₂) and hydrochloric acid (HCl). The sorbent will be stored in a silo with a bin vent for loading. The sorbent will be withdrawn from the bin and pneumatically conveyed to the flue duct upstream of the ESP. The type of sorbent to be used could meet the definition of a non metallic mineral as defined in 40 CFR Part 60.671.

Applicability to Subpart OOO applies to affected facilities fixed or portable nonmetallic processing plants, including each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, and enclosed truck or railcar loading station. Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral at any type of plant.

The provisions of Subpart OOO do not apply to the following operations: All facilities located in underground mines; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in §60.671). The Project does not include crushers or grinding mills for sorbent material and as such is not subject to Subpart OOO.

4.3 National Emission Standards for Hazardous Air Pollutants (MACT Standards)

The Project is not major for HAPs. The standards under 40 CFR Part 63 are, therefore, not applicable.

4.4 Florida Rules

Florida has adopted the NSR program requirements, NSPS, and NESHAPs by reference. Therefore, the facility is required to meet the same emissions, performance testing, monitoring, reporting, and record keeping as those described in the previous sections.

4.4.1 Rule 62-296.410, F.A.C., Carbonaceous Fuel Burning Equipment

Carbonaceous fuel is defined in the Department's rules as solid materials composed primarily of vegetative matter such as tree bark, wood waste, or bagasse. The Project boiler is subject Rule 62-296.410, F.A.C. The following emissions limits are applicable to the boiler:

- 30% opacity except that 40% is permissible for not more than two minutes in any one hour; and
- PM is limited to 0.2 lb/MMBtu of heat input.

The Project will exceed the emission limitations of Rule 62-296.410, F.A.C.

4.4.2 Rule 62-296.416, F.A.C., Waste-to-Energy

The Department's rules define the term "waste-to-energy facility" as a facility that uses controlled combustion to thermally break down solid, liquid, or gaseous combustible solid waste to an ash residue that contains little or no combustible material and that produces electricity, steam, or other energy as a result. The term does not include facilities that primarily burn fuels other than solid waste, even if the facilities also burn some solid waste as a fuel supplement. The term also does not include facilities that burn vegetative, agricultural, or silvicultural wastes, bagasse, clean dry wood, methane or other landfill gas, wood fuel derived from construction or demolition debris, or waste tires, alone or in combination with fossil fuel [Rule 62-210.200(331), F.A.C.]. Therefore this rule would not apply to the Project.

4.5 Other Clean Air Act Requirements

4.5.1 The Acid Rain Program

The 1990 Clean Air Act Amendments established the Acid Rain Program to reduce the release of acidic deposition precursors, SO₂ and NO_x. EPA's final regulations were promulgated on January 11, 1993, and included permit provisions (Part 72), allowance system (Part 73), continuous emission monitoring (Part 75), excess emission procedures (Part 77), and appeal procedures (Part 78).

This Acid Rain Program generally applies to all existing and new utility units. "Utility unit" is defined to mean "a unit owned and operated by a utility ... that serves a generator in any State that produces

electricity for sale." "Utility" is defined to mean "any person that sells electricity." Under these definitions, FBenergy would be considered a "utility" and the proposed boiler will be considered a "utility unit." There are exceptions to the Acid Rain Program for certain types of units (e.g., small units serving generators with nameplate capacities of less than 25 MW, pre-1991 small simple cycle combustion turbines, cogenerating facilities, qualifying facilities and independent power producers with contracts in effect as of 1990, solid waste incineration units, etc.), none of which appear applicable to the proposed project. The Acid Rain Program therefore appears applicable to the Project. Accordingly, applications for an Acid Rain permit and a Certificate of Representation are also included in this air permit application package.

4.5.2 Regional Haze

The Department's Best Available Retrofit Technology (BART) rule applies to facilities in existence on August 7, 1977, and that have the potential to emit 250 tons per year or more of any air pollutant (Rule 62-296.340, F.A.C.). The Project does not meet these criteria and therefore the BART rule does not apply. Similarly, the Department's Reasonable Further Progress rule applies to units in existence as of August 30, 1999. Therefore, this rule is also not applicable to the Project (Rule 62-296.341, F.A.C.).

4.5.3 Clean Air Interstate Rule (CAIR)

Generally, the CAIR program applies to stationary boilers and combustion turbines that fire any amount of fossil fuel at any time and serve a generator with a nameplate capacity of more than 25 MW, producing electricity for sale. Although the nameplate capacity of boiler and steam turbine proposed for the Project is greater than 25 MW, no fossil fuel will be fired in the boiler and as such CAIR is not applicable to this Project.

4.5.4 Greenhouse Gas (GHG) Rulemaking

The use of biomass is generally recognized as "carbon neutral."¹ The U.S. EPA found that because biomass fuels are of biogenic origin, it is assumed that the carbon released during the consumption of biomass is recycled as forests and crops regenerate, causing no net addition of CO₂ to the atmosphere.² In addition, the Intergovernmental Panel on Climate Change (IPCC) recently found that bioenergy and the

¹ Intergovernmental Panel on Climate Change, *Greenhouse Gas Inventory Reference Manual: Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, Vol. 3, p. 6.28 (1997); The Climate Registry, *General Reporting Protocol for the Voluntary Reporting Program, Draft for Public Comment* (October 29, 2007), p. 22 (separate reporting for carbon dioxide emissions from biogenic sources); California Environmental Protection Agency, Air Resources Board, *Staff Report: Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32)* (October 19, 2007), pp. 5, 12 (carbon dioxide emissions from biomass-derived fuels are to be separately identified during reporting; biomass emissions are generally considered "carbon neutral").

² U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006* (February 22, 2008), Public Review Draft, p. 3-1.

use of dedicated energy crops were key climate change mitigation technologies that should be pursued and “could contribute substantially to the share of renewable energy in the mitigation portfolio.”³

When biomass is used as a feedstock or a fuel, the carbon involved is on a relatively “short-cycle” — i.e., the CO₂ is produced from the oxidation of current or recently living biomass. Since the CO₂ was recently in circulation in the atmosphere, there is no net addition of new CO₂ when it is returned to the atmosphere. For example, when the grass in a person’s front yard grows, it removes some CO₂ from the air during photosynthesis and growth. When the yard is mowed, the cut grass decomposes, returning the CO₂ to the atmosphere within days. For other types of biomass, the cycle may take months or even a few years to complete, but the timeframe is still relatively short, and the carbon dioxide released when that biomass is burned or decomposed is not a “new” net addition to the total. The CO₂ balance would be zero. Even when the entire “life cycle” is considered, the use of biomass is still considered carbon neutral.

A complete “life cycle” assessment, which is appropriate for use in considering project’s CO₂ emissions, is where the environmental benefits and impacts are quantified in a cradle-to-grave manner to cover resource consumption and all processes necessary for a power generation system.⁴ A life cycle assessment for a biomass facility would include energy and resources used for crop cultivation, preparation, and transportation; construction and operation of the power generation system; emissions; and wastes. Such analyses have indicated that biomass-based power generation systems have neutral or very minimal CO₂ emissions, in part because, as mentioned above, trees and plants absorb CO₂ as they grow and also because CO₂ can accumulate in the soil.⁵ When waste biomass is used, the greenhouse gas emissions are further reduced because of the avoided methane generation associated with biomass decomposition that would have occurred had the waste biomass not been used by the power generation system.⁶ This results in a net reduction of greenhouse gas emissions.

³ Intergovernmental Panel on Climate Change, *Contribution of Working Group III to the Fourth Assessment Report* (2007), pp. 10, 16.

⁴ Governor’s Action Team on Energy and Climate Change, *Phase 1 Report: Florida’s Energy and Climate Change Action Plan Pursuant to Executive Order 07-127* (November 1, 2007), p. 24 (life cycle assessments are appropriate).

⁵ National Renewable Energy Laboratory, *Life Cycle Assessment Comparisons of Electricity from Biomass, Coal, and Natural Gas*, Margaret K. Mann and Pamela L. Spath (November 2002); National Renewable Energy Laboratory, *Life Cycle Assessment of Biomass Gasification Combined-Cycle System*, Margaret K. Mann and Pamela L. Spath (December 1997); Biomass and Energy 25, *Life Cycle Assessment of a Willow Bioenergy Cropping System*, Martin C. Heller, Gregory A. Keoleian, Timothy A. Volk (2003), pp. 147-165.

⁶ National Renewable Energy Laboratory, *Life Cycle Assessment Comparisons of Electricity from Biomass, Coal, and Natural Gas*, Margaret K. Mann and Pamela L. Spath (November 2002).

5.0 AIR QUALITY IMPACT ANALYSIS

The Project is a minor source and not subject to Prevention of Significant Deterioration (PSD) review. Air dispersion modeling is generally not required for minor sources. However, an air quality impact analysis is voluntarily provided to demonstrate compliance with the ambient air quality standards. This section contains a summary of the methodologies and results of the air quality impact assessments performed to determine compliance of the proposed project with the national and State of Florida ambient air quality standards (AAQS).

5.1 General Modeling Approach

The general modeling approach for the significant impact analysis, followed the EPA modeling guidelines for determining compliance with the AAQS. A significant impact analysis was performed for the criteria pollutants: SO_2 , NO_x , PM_{10} , and CO to determine whether the new emission sources associated with the Project, given their stack configuration and other modeling inputs, will result in predicted impacts that are in excess of the EPA significant impact levels (SILs). Until the significant impact levels and de minimis monitoring concentrations for $\text{PM}_{2.5}$ are finalized and the NSR implementation guideline is finalized, the proposed project's PM_{10} impacts are assumed as a surrogate for $\text{PM}_{2.5}$.

5.1.1 Site Vicinity

Current policies stipulate that the highest annual average and highest short-term (i.e., 24 hours or less) concentrations are to be compared to the applicable Significant Impact Levels (see Table 5-1). If the maximum Project-only impacts are equal to or greater than the SIL, additional detailed air modeling analyses are required which consider cumulative source impacts of the project plus other background sources. For the detailed analysis, the maximum predicted impacts due to the proposed project and background source emissions are added to a determined non-modeled background concentration to obtain a total concentration that is compared to the AAQS.

5.1.2 PSD Class I Areas

Generally, if a major new facility or major modification is located within 200 km of a PSD Class I area, then a significant impact analysis is also performed to evaluate the impacts of the Project alone at the PSD Class I area.

The Project will be located approximately 110 km from the nearest boundary of the Chassahowitzka National Wilderness Area (CHNWA) PSD Class I area. The CHNWA is the only PSD Class I area within 200 km of the proposed Project. Because the proposed Project is not a major source, demonstrations of compliance with the Federal Land Manager's Air Quality Relative Values (AQRV) are not required.

Per an April 30, 2009 EPA memorandum, the AERMOD model was used in a screening analysis to provide conservative estimates of the maximum concentrations of PM₁₀, SO₂, and NO₂ that would occur at the CHNWA PSD Class I area. Concentrations are predicted at receptors located 50 km from the proposed site in the direction of the PSD Class I area. The maximum predicted concentrations are then compared to the PSD Class I SILs.

If the maximum impacts are significantly above a SIL, additional refinements will need to be conducted using the CALPUFF modeling system to determine if any SILs are exceeded at PSD Class I area.

5.2 Cumulative Source Impact Analysis

5.2.1 AAQS Analysis

As previously noted, if the Project-only impacts are greater than the SIL, the air modeling analyses must consider other nearby sources and background concentrations, and determine the cumulative impact of these sources for comparison to the AAQS.

As described in Section 5.9, the proposed Project's annual average and 24-hour average PM₁₀ impacts are predicted to be greater than the SIL. Therefore, additional, detailed air modeling analyses must be performed that include the emissions of background sources that are within the modeling domain as generally defined as the extent of the predicted Significant Impact Area plus 50 km. The AAQS analysis is a cumulative source analysis that evaluates whether the air quality impact from all modeled sources plus a representative monitored concentration will comply with the AAQS. The background concentration accounts for sources not included in the modeling analysis.

In general, when five years of meteorological data are used in the analysis, the highest annual and the highest, second-highest (HSH) short-term concentrations are compared to the applicable AAQS. The HSH concentration is calculated each year for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

For the PM₁₀ AAQS analysis the highest annual and the highest sixth-highest (H6H) concentrations predicted at each receptor over five years of meteorological data, is used to compare to the applicable AAQS.

5.3 Model Selection

The air modeling analysis was performed using the American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD, Version 07040) to predict concentrations in the vicinity of the proposed Project site location. The modeling analysis is based on predicting impacts within 50 km of the Project. The EPA regulatory default options were used to predict all maximum impacts. These options include:

- Use of elevated terrain algorithms;
- Stack-tip downwash (except for building downwash cases);
- Use of missing data processing routines;
- Use of calm wind processing routines; and
- Use of 4-hour half life for exponential decay of SO₂ for urban sources.

5.4 Meteorological Data

Meteorological data used in the AERMOD model to determine air quality impacts associated with the Project site consisted of a 5-year AERMET meteorological data set for years 2001 through 2005, with surface data from Sarasota-Bradenton Airport (SRQ) and twice-daily upper air soundings from Tampa International Airport (TPA). The Sarasota-Bradenton/Tampa data set has been approved by the FDEP for projects in this area. Land use parameters for the AQQ meteorological data record were updated using the procedures outlined in the AERMOD Implementation Guide (2009). Golder used the EPA's AERSURFACE tool (EPA, 2008) to calculate monthly land use values for the SRQ site and incorporated the land use parameters into the meteorological record using AERMOD's meteorological preprocessor program AERMET, Version 06341. A listing of AERMOD features is presented in Table 5-2.

5.5 Emission Inventory

5.5.1 Significant Impact Analysis

A summary of the source location and parameter data for the proposed project is presented in Table 5-3. Per general modeling guidance the boiler, cooling towers, and baghouses were modeled as point sources; the material handling transfer points were modeled as volume sources; and the storage pile and truck unloading areas were modeled as poly-area and area sources, respectively. A summary of emission rates for the proposed project's sources is presented in Table 5-4.

5.5.2 AAQS Analysis

The maximum impacts for the proposed project are predicted to be greater than the SIL for PM₁₀. As a result, cumulative source impact analysis was required to determine compliance with PM₁₀ AAQS.

The significant impact area (SIA) for PM₁₀ was determined based on the maximum distance to which the pollutant had a significant impact. The maximum radius of impact was used as the basis for determining the inventory of background sources to be included in the air impact analysis. The proposed Project's SIA

for the 24-hour PM_{10} , and annual average PM_{10} concentrations are predicted to extend out to 2 km from the proposed project site. EPA modeling guidance requires that the background source inventory include source located within and 50 km beyond the predicted SIA.

Facilities located within the SIA were automatically included in the modeling analysis. Facilities located beyond the SIA but within the 2 km (SIA plus 50 km) were considered to be in the screening area. A list of counties located within 2 km of the proposed project site was developed.

The summary of facilities for which PM_{10} emissions were evaluated for inclusion in the PM_{10} AAQS analysis is shown in Table 5-6. A summary of the detailed source emissions and parameter data included in the PM_{10} NAAQS analysis is presented in Table 5-7.

5.6 Building Downwash Effects

All proposed point sources were evaluated for determining compliance with Good Engineering Practice (GEP) regulations and the potential influence of nearby buildings and structures that could cause building downwash. The height for the boiler stack is 133 ft above grade. For each stack that is below the GEP height, direction-specific building heights and maximum projected widths were determined using the Building Profile Input Program (BPIP, Version 04274), which incorporates the Plume Rise Model Enhancement (PRIME) downwash algorithm developed by the Electric Power Research Institute (EPRI). The direction-specific building information output by BPIP will be input to the air dispersion model for processing.

A summary of the proposed facility's solid building structures is presented in Table 5-5.

5.7 Receptors

Receptors were placed along the Project site's restricted property boundary (i.e., fenceline) and beyond the fenceline according to the following receptor spacing.

- Along the property boundary or fenceline — 50 meters (m);
- Beyond the fenceline to 2 km — 100 m; and
- From 2 km to 4 km — 250 m.

All maximum predicted concentrations were obtained from a receptor grid comprising 50-m resolution on the fence line and 100-m resolution or less beyond the fence line. AERMOD's terrain preprocessing program, AERMAP, Version 09040, was used to process the receptor grid data in all near-field areas, using seamless National Elevation Data – from the U. S. Geological Survey website.

5.8 Background Concentrations

As previously discussed, representative background concentrations are added to the modeled impacts to determine total (cumulative) ambient air quality impacts. These total impacts are then compared with the appropriate NAAQS to demonstrate the total project impacts will not cause or significantly contribute to a violation of NAAQS. By definition, "background" includes other point sources not included in the modeling analysis (i.e., distant sources or small sources), non-project related fugitive emission sources, and natural background sources. Measured ambient PM₁₀ data from the nearest monitors are presented in Table 5-8. The nearest monitor to the proposed project site that measures PM₁₀ concentrations is the Holland House Buckeye Road monitoring station (Site ID 12-081-0008) located in Manatee County, Florida. The Holland House Buckeye Road monitoring station is located approximately 1 km (0.5 miles) northwest of the proposed project site. The highest annual and the highest, second highest 24-hour average PM₁₀ concentrations of 24 µg/m³ and 49 µg/m³, respectively, were added to the modeled source concentrations to obtain a total concentration for comparison to the AAQS.

5.9 Modeling Results

5.9.1 PSD Class II Significant Impact Analysis

The maximum predicted Project-only impacts are compared to the SILs in Table 5-9. Since the maximum predicted SO₂, NO₂, and CO impacts due to the proposed Project are less than the SILs, additional modeling analyses are not required for those pollutants. Since the maximum predicted PM₁₀ impacts are greater than the SIL, additional cumulative source modeling analyses are required to demonstrate compliance with the AAQS.

5.9.2 PSD Class I Significant Impact Analysis

A summary of the PSD Class I analysis results is presented in Table 5-10. Since the maximum predicted impacts were below the PSD Class I SILs for all pollutants, further analyses were not required.

5.9.3 PM₁₀ AAQS Analysis

A summary of the results of the 24-hour average PM₁₀ Ambient Air Quality Standard modeling analyses is presented in Table 5-11. The maximum annual average and H6H 24-hour total PM₁₀ concentrations are predicted to be 35.5 and 111.7 µg/m³, respectively, which are less than the annual and 24-hour PM₁₀ NAAQS of 50 and 150 µg/m³, respectively.

5.9.4 Conclusions

Based on the detailed air quality modeling analyses, the maximum pollutant concentrations due to the Project are predicted to be less than the PSD Class II Significant Impact Levels for CO, SO₂, and NO₂ for all averaging periods. However, additional detailed modeling analyses were performed for the annual and

24-hour PM_{10} NAAQS. Based on the PSD Class I significant impact analysis, the maximum pollutant concentrations due to the proposed project are predicted to be less than the PSD Class I Significant Impact Levels for all pollutants and additional detailed modeling is not required at the Class I areas.

The results of the cumulative air modeling analyses demonstrate that the Project will comply with all applicable NAAQS, and will not have an adverse effect on human health.

TABLES

**TABLE 3-1
REGULATORY APPLICABILITY BASED ON PROJECT EMISSIONS**

Pollutant	Boiler (TPY)	Material Handling Operations ^a (TPY)	Emergency Generator (TPY)	Fire Water Pump (TPY)	Cooling Tower (TPY)	Total (TPY)	PSD Threshold (TPY)	PSD Review (Y/N)	NESHAP Threshold (TPY)	NESHAP Applicable (Y/N)
NO _x	66.31	NA	0.99	0.25	NA	67.6	250	N	-	-
CO	97.81	NA	0.96	0.24	NA	99.0	250	N	-	-
PM	33.16	8.91	0.055	0.014	2.44	44.57	250	N	-	-
PM ₁₀	33.16	2.58	0.055	0.014	0.38	36.18	250	N	-	-
PM _{2.5}	33.16	0.43	0.055	0.014	0.38	34.03	250	N	-	-
VOC	9.95	NA	0.12	0.030	NA	10.1	250	N	-	-
SO ₂	53.05	NA	0.002	0.0005	NA	53.1	250	N	-	-
SAM	1.19	NA	neg.	neg.	NA	1.19	7	N	-	-
Lead	0.16	NA	0.00001	0.000003	NA	0.16	0.6	N	-	-
Fluoride	0.00	NA	neg.	neg.	NA	0.0007	3	N	-	-
HAP (Individual)	9.83	NA	0.003	0.0009	NA	9.83	-	-	10	N
HAP (Total)	24.94	NA	0.005	0.001	NA	24.95	-	-	25	N

^a Material handling PM emissions from wood delivery and ash shipping yard and transfer systems. See Appendix B Tables.

Source: Golder, 2009.

**TABLE 3-2
PROPOSED BOILER MAXIMUM EMISSIONS AT 100% LOAD**

Pollutant	Reference	Heat Input		Maximum Emissions		
		(MMBtu/hr)	(MMBtu/yr) ^c	Grate-type Suspension Boiler or Circulating Fluidized Bed		
				(lb/MMBtu) ^a	(lb/hr)	(TPY)
NO _x	^b	757	6,631,320	0.02	15.1	66.3
CO	^b	757	6,631,320	0.0295	22.3	97.8
PM	^b	757	6,631,320	0.01	7.6	33.2
PM ₁₀	^b	757	6,631,320	0.01	7.6	33.2
PM _{2.5}	^b	757	6,631,320	0.01	7.6	33.2
VOC	^b	757	6,631,320	0.0030	2.3	9.9
SO ₂	^b	757	6,631,320	0.016	12.11	53.1
SAM		757	6,631,320	0.00036	0.3	1.19
Fluoride		757	6,631,320	0.000018	0.00135	0.0
Lead ^d		757	6,631,320	0.000048	0.036	0.2

^a Emission guarantees/factors based on the following controls per boiler:

Grate-type Suspension Boiler

- 1 Sorbent Injection for SO₂, SAM, Acid Gas Control
- 2 ESP for PM control
- 3 Oxidation Catalyst for CO, VOC control
- 4 SCR for NO_x control

Circulating Fluidized Bed Boiler

- 1 Sorbent Injection for SO₂, SAM, Acid Gas Control
- 2 ESP for PM control
- 3 SCR for NO_x control

^b Emissions based on vendor guarantees.

Source: Golder, 2009.

**TABLE 3-3
SULFURIC ACID MIST (SAM) EMISSION ESTIMATES
FOR THE BOILER AT 100% LOAD**

Parameter	Units	Value
Fuel Sulfur Content	%	0.02
Fuel Heat Content (HHV)	Btu/lb	5,594
Heat Input	MMBtu/hr	757
	MMBtu/yr	6,631,320
Fuel Consumption	tons/hr	68
	TPY	592,717
Uncontrolled SO ₂ Emissions ^a	lb/MMBtu	0.07
	lb/hr	54
	lb/year	42,382
I. SAM Manufactured from Combustion: $E1(lb) = K \times F1 \times E2$		
Conversion Factor: K ^b	lb/ton	3,063
Fuel Impact Factor: F1 ^c		0.04
SO ₂ Emissions: E2	TPY	21.19
SAM Manufactured: E1	lb	2,596
II. SAM Released from Combustion: $E1'_{comb}(lb) = E1 \times F2 \times F2$		
SAM Manufactured: E1	lb	2,596
Technology Impact Factor (Air Preheater): F2		0.50
Technology Impact Factor (Hot side ESP): F2		1
SAM Released: E1'	lb	1,298
III. SAM Manufactured from SCR: $SAM\ E1_{scr}(lb) = K \times F1 \times fs \times E2$		
Conversion Factor: K ^b	lb/ton	3,063
Fuel Impact Factor: F1		0.04
Operating Factor: fs		1
SO ₂ Emissions: E2 ^d	TPY	8.9
SAM Manufactured from SCR (E1scr)	lb	1,090
SAM Emissions (Sum of Parts II and III)- TOTAL	lb/yr	2,389
Heat Input	MMBtu/yr	6,631,320
	lb/MMBtu	0.00036
	lb/hr	0.27
	TPY	1.19

^a Based on ratio of SAM/SO₂ molecular weights (98/64) times 2,000 lb/ton

^b Assumes 100% of sulfur converted to SO₂ for the purpose of calculating the amount of SAM produced

^c 0.04 for alternative fuels (Southern Company, 2005, Table 1, Other Alternative Fuel).

^d Assumes reduction in SO₂ prior to SCR due to sorbent injection: 58 percent.

Source: Golder, 2009.

TABLE 3-4
ACID GAS EMISSION ESTIMATES
FOR THE BOILER AT 100% LOAD

Parameter	HCl	HF
Heat Input (MMBtu/hr)	757	757
Heat Input (MMBtu/yr)	6,631,320	6,631,320
Uncontrolled Emissions (lb/MMBtu) ^a	0.026	1.78948E-06
Dry Sorbent Control Efficiency (%) (Design Basis) ^b	88	88
Controlled Emissions (lb/MMBtu)	0.00312	2.14738E-07
Emissions (lb/hr)	2.36	1.63E-04
Emissions (TPY)	9.83	7.12E-04

^a HCl based on design fuel basis Cl content = 0.014. HF based on AP-42.

^b Control efficiency based on sorbent injection prior to ESP. Dry sorbent may be sodium bicarbonate (NaHCO₃) or Trona.

Source: Golder, 2009.

**TABLE 3-5
ORGANIC HAP EMISSIONS ESTIMATES
FOR THE BOILER AT 100% LOAD**

Organic Compound	Emission Factor		Uncontrolled Emissions		Control		Controlled Emissions	
	(lb/MMBtu)	Rating	(lb/hr)	(TPY)	Device	(%)	(lb/hr)	(TPY)
Acetaldehyde	8.3E-04	A	6.3E-01	2.8E+00	OC	75	1.6E-01	6.9E-01
Acetophenone	3.2E-09	D	2.4E-06	1.1E-05	OC	75	6.1E-07	2.7E-06
Acrolein	4.0E-03	C	3.0E+00	1.3E+01	OC	75	7.6E-01	3.3E+00
Benzene	4.2E-03	A	3.2E+00	1.4E+01	OC	75	7.9E-01	3.5E+00
bis(2-Ethylhexyl)phthalate	4.7E-08	D	3.6E-05	1.6E-04	OC	75	8.9E-06	3.9E-05
Bromomethane	1.5E-05	D	1.1E-02	5.0E-02	OC	75	2.8E-03	1.2E-02
Carbazole	1.8E-06	D	1.4E-03	6.0E-03	OC	75	3.4E-04	1.5E-03
Carbon tetrachloride	4.5E-05	D	3.4E-02	1.5E-01	OC	75	8.5E-03	3.7E-02
Chlorine	7.9E-04	D	6.0E-01	2.6E+00	OC	75	1.5E-01	6.5E-01
Chlorobenzene	3.3E-05	D	2.5E-02	1.1E-01	OC	75	6.2E-03	2.7E-02
Chloroform	2.8E-05	D	2.1E-02	9.3E-02	OC	75	5.3E-03	2.3E-02
Chloromethane	2.3E-05	D	1.7E-02	7.6E-02	OC	75	4.4E-03	1.9E-02
1,2-Dibromoethene	5.5E-05	D	4.2E-02	1.8E-01	OC	75	1.0E-02	4.6E-02
1,2-Dichloroethane	2.9E-05	D	2.2E-02	9.6E-02	OC	75	5.5E-03	2.4E-02
Dichloromethane	2.9E-04	D	2.2E-01	9.6E-01	OC	75	5.5E-02	2.4E-01
1,2-Dichloropropane	3.3E-05	D	2.5E-02	1.1E-01	OC	75	6.2E-03	2.7E-02
2,4-Dinitrophenol	1.8E-07	C	1.4E-04	6.0E-04	OC	75	3.4E-05	1.5E-04
Ethylbenzene	3.1E-05	D	2.3E-02	1.0E-01	OC	75	5.9E-03	2.6E-02
Formaldehyde	4.4E-03	A	3.3E+00	1.5E+01	OC	75	8.3E-01	3.6E+00
Naphthalene	9.7E-05	A	7.3E-02	3.2E-01	OC	75	1.8E-02	8.0E-02
2-Nitrophenol	2.4E-07	C	1.8E-04	8.0E-04	OC	75	4.5E-05	2.0E-04
4-Nitrophenol	1.1E-07	C	8.3E-05	3.6E-04	OC	75	2.1E-05	9.1E-05
Pentachlorophenol	5.1E-08	C	3.9E-05	1.7E-04	OC	75	9.7E-06	4.2E-05
Phenol	5.1E-05	C	3.9E-02	1.7E-01	OC	75	9.7E-03	4.2E-02
Propionaldehyde	6.1E-05	D	4.6E-02	2.0E-01	OC	75	1.2E-02	5.1E-02
Styrene	1.9E-03	D	1.4E+00	6.3E+00	OC	75	3.6E-01	1.6E+00
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.6E-12	C	6.5E-09	2.9E-08	OC	75	1.6E-09	7.1E-09
Tetrachlorodibenzo-p-dioxins	4.7E-10	C	3.6E-07	1.6E-06	OC	75	8.9E-08	3.9E-07
2,3,7,8-Tetrachlorodibenzo-p-furans	9.0E-11	C	6.8E-08	3.0E-07	OC	75	1.7E-08	7.5E-08
Tetrachlorodibenzo-p-furans	7.5E-10	C	5.7E-07	2.5E-06	OC	75	1.4E-07	6.2E-07
Toluene	9.2E-04	C	7.0E-01	3.1E+00	OC	75	1.7E-01	7.6E-01
1,1,1-Trichloroethane	3.1E-05	D	2.3E-02	1.0E-01	OC	75	5.9E-03	2.6E-02
Trichloroethene	3.0E-05	D	2.3E-02	9.9E-02	OC	75	5.7E-03	2.5E-02
2,4,6-Trichlorophenol	<2.2E-08	C	1.7E-05	7.3E-05	OC	75	4.2E-06	1.8E-05
Total HAP Emissions			13.55	59.33			3.39	14.83
Individual HAP Emissions			3.33	14.59			0.83	3.65
Emissions based on:								
Heat Input (MMBtu/hr)			757					
Heat Input (MMBtu/YR)			6,631,320					

Note: EPA Emission Factor Ratings: A-Excellent; B-Above Average; C-Average; D-Below Average; E-Poor.
Control Device Code: OC - Oxidation Catalyst, SI - Sorbent Injection, ESP - Electrostatic Precipitator
Oxidation Catalyst Efficiency assumed equal to VOC control efficiency

Source: Golder, 2009. EPA, 1998; Table 1.6-3.

**TABLE 3-6
METAL TRACE ELEMENT HAP EMISSIONS ESTIMATES
FOR THE BOILER AT 100% LOAD**

Organic Compound	Emission Factor (lb/MMBtu)	Rating	Uncontrolled Emissions		Control		Controlled Emissions	
			(lb/hr)	(TPY)	Device	(%)	(lb/hr)	(TPY)
Antimony	7.9E-06	C	6.0E-03	2.6E-02	ESP	98	1.2E-04	5.2E-04
Arsenic	2.2E-05	A	1.7E-02	7.3E-02	ESP	98	3.3E-04	1.5E-03
Beryllium	1.1E-06	B	8.3E-04	3.6E-03	ESP	98	1.7E-05	7.3E-05
Cadmium	4.1E-06	A	3.1E-03	1.4E-02	ESP	98	6.2E-05	2.7E-04
Chromium, total	2.1E-05	A	1.6E-02	7.0E-02	ESP	98	3.2E-04	1.4E-03
Cobalt	6.5E-06	C	4.9E-03	2.2E-02	ESP	98	9.8E-05	4.3E-04
Lead	4.8E-05	A	3.6E-02	1.6E-01		0	3.6E-02	1.6E-01
Manganese	1.6E-03	A	1.2E+00	5.3E+00	ESP	98	2.4E-02	1.1E-01
Mercury	3.5E-06	A	2.6E-03	1.2E-02		0	2.6E-03	1.2E-02
Nickel	3.3E-05	A	2.5E-02	1.1E-01	ESP	98	5.0E-04	2.2E-03
Selenium	2.8E-06	A	2.1E-03	9.3E-03	ESP	98	4.2E-05	1.9E-04
Total HAP Emissions			1.32	5.80			0.06	0.28
Individual HAP Emissions			1.21	5.31			0.04	0.16
Emissions based on:								
	Heat Input (MMBtu/hr)		757					
	Heat Input (MMBtu/YR)		6,631,320					

Note: EPA Emission Factor Ratings: A-Excellent; B-Above Average; C-Average; D-Below Average; E-Poor.

Source: Golder, 2009. EPA, 1998; Table 1.6-4.

TABLE 3-7
SUMMARY OF PM EMISSIONS FROM THE MATERIAL HANDLING OPERATIONS
Project: FB Energy

Operation Scenario	PM Emission Rate		PM ₁₀ Emission Rate		PM _{2.5} Emission Rate	
	Hourly ^a (lb/hr)	Annual (TPY)	Hourly ^a (lb/hr)	Annual (TPY)	Hourly ^a (lb/hr)	Annual (TPY)
Truck Traffic on Paved Road						
Fuel Delivery	1.48	5.48	0.29	1.07	0.04	0.16
Sorbent Delivery	0.0008	0.0036	0.0002	0.0007	0.00002	0.0001
Ash Shipping	0.0054	0.0233	0.0011	0.0045	0.0002	0.0007
Fuel Pile Maintenance Frontend loader	0.0503	0.1575	0.0154	0.0482	0.0024	0.0074
Emergency Reclaim Frontend Loader	12.01	1.99	2.34	0.39	0.35	0.06
Subtotal	13.55	7.65	2.65	1.51	0.40	0.22
Stack Out Operations						
Transfer Operations	0.028	0.026	0.013	0.013	0.002	0.002
Wind Erosion- Fuel Storage	0.0596	0.0393	0.0298	0.0197	0.0045	0.0029
Wind Erosion- Emergency Pile ^b	0.0147	0.0004	0.0074	0.0002	0.0011	0.00003
Subtotal	0.10	0.07	0.05	0.03	0.01	0.00
Relcaim Operations						
Normal Operation	0.007	0.016	0.003	0.008	0.0005	0.001
Short-term Emergency Operation ^b	0.0216	0.0019	0.0102	0.0009	0.0015	0.0001
Subtotal	0.029	0.018	0.014	0.009	0.002	0.001
Screens and Hog Mill	0.059	0.232	0.023	0.089	0.015	0.061
Material Storage Silos						
Sorbent	0.01	0.005	0.01	0.005	0.001	0.001
Ash (including batch drop to ash trucks)	0.214	0.939	0.214	0.939	0.032	0.142
Subtotal	0.22	0.94	0.22	0.94	0.03	0.14
Total Emissions	13.96	8.91	2.96	2.58	0.46	0.43

Source: Golder, 2009

^a Based on maximum daily throughputs.

^b Assumes two-week operation per year.

TABLE 3-8
PERFORMANCE AND EMISSION DATA
FOR EMERGENCY GENERATOR

Parameter	Value
<u>Performance</u>	
Number of Units	1
Rating (kW)	500
Rating (hp)	671
Fuel	Diesel/Bio-Diesel
Fuel Heat content (Btu/lb) (HHV)	19,300
Fuel density (lb/gal)	7.1
Heat input (MMBtu/hr) (HHV)	5.02
Fuel usage (gallons/hr)	36.6
Maximum operation (hours)	500
Maximum fuel usage (gallons/yr)	18,300
<u>Emissions</u>	
SO ₂ - Basis (%S)	0.0015%
Conversion of S to SO ₂	100
Molecular weight SO ₂ / S (64/32)	2
Emission rate (lb/hr)	0.01
(TPY)	0.0019
NO _x - Basis (g/hp-hr)	2.68
Emission rate (lb/hr)	4.0
(TPY)	0.99
CO - Basis (g/hp-hr)	2.6
Emission rate (lb/hr)	3.8
(TPY)	0.96
VOC - Basis (g/hp-hr)	0.32
Emission rate (lb/hr)	0.5
(TPY)	0.12
PM/PM ₁₀ /PM _{2.5} - Basis (g/hp-hr)	0.15
Emission rate (lb/hr)	0.2
(TPY)	0.06

Source: Golder, 2009; 40 CFR Part 60, Subpart IIII, 40 CFR 89.112, AP-42

TABLE 3-9
PERFORMANCE AND EMISSION DATA
FOR FIRE WATER PUMP

Parameter	Value
<u>Performance</u>	
Number of Units	1
Rating (kW)	250
Rating (hp)	335
Fuel	Diesel/Bio-Diesel
Fuel Heat content (Btu/lb) (HHV)	19,300
Fuel density (lb/gal)	7.1
Heat input (MMBtu/hr) (HHV)	2.6584
Fuel usage (gallons/hr)	19.4
Maximum operation (hours/yr)	250
Maximum fuel usage (gallons/yr)	4,850
<u>Emissions</u>	
SO ₂ - Basis (%S)	0.0015%
Conversion of S to SO ₂	100
Molecular weight SO ₂ / S (64/32)	2
Emission rate (lb/hr)	0.0041
(TPY)	0.0005
NO _x - Basis (g/hp-hr)	2.68
Emission rate (lb/hr)	2.0
(TPY)	0.2474
CO - Basis (g/hp-hr)	2.6
Emission rate (lb/hr)	1.9
(TPY)	0.24
VOC - Basis (g/hp-hr)	0.32
Emission rate (lb/hr)	0.2
(TPY)	0.03
PM/PM ₁₀ /PM _{2.5} - Basis (g/hp-hr)	0.15
Emission rate (lb/hr)	0.1
(TPY)	0.01

Source: Golder, 2009; 40 CFR Part 60, Subpart IIII, AP-42

TABLE 3-10
HAZARDOUS AIR POLLUTANTS EMISSIONS FACTORS AND EMISSIONS
FOR EMERGENCY GENERATOR AND FIRE WATER PUMP (IC ENGINES) - FUEL OIL COMBUSTION

Parameter	Emission Factor		Emissions (TPY)	
	Factor	Units	Emergency Generator	Fire Water Pump
Organics				
Acrolein	7.88E-06	lb/MMBtu	9.81E-06	2.60E-06
Acetaldehyde	2.52E-05	lb/MMBtu	3.14E-05	8.31E-06
Benzene	7.76E-04	lb/MMBtu	9.66E-04	2.56E-04
Formaldehyde	7.89E-05	lb/MMBtu	9.82E-05	2.60E-05
Naphthalene	1.30E-04	lb/MMBtu	1.62E-04	4.29E-05
Toluene	2.81E-04	lb/MMBtu	3.50E-04	9.27E-05
Xylene	1.93E-04	lb/MMBtu	2.40E-04	6.37E-05
Acenaphthene	4.68E-06	lb/MMBtu	5.82E-06	1.54E-06
Acenaphthylene	9.23E-06	lb/MMBtu	1.15E-05	3.04E-06
Anthracene	1.23E-06	lb/MMBtu	1.53E-06	4.06E-07
Benzo(a)anthracene	6.22E-07	lb/MMBtu	7.74E-07	2.05E-07
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	1.38E-06	3.66E-07
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	2.71E-07	7.19E-08
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	6.92E-07	1.83E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	3.20E-07	8.48E-08
Chrysene	1.53E-06	lb/MMBtu	1.90E-06	5.05E-07
Dibenzo(a,h)anthracene	3.46E-07	lb/MMBtu	4.31E-07	1.14E-07
Fluoranthene	4.03E-06	lb/MMBtu	5.01E-06	1.33E-06
Fluorene	4.47E-06	lb/MMBtu	5.56E-06	1.47E-06
Indo(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	5.15E-07	1.37E-07
Phenanthrene	1.05E-06	lb/MMBtu	1.31E-06	3.46E-07
Propylene	2.79E-03	lb/MMBtu	3.47E-03	9.20E-04
Pyrene	3.71E-06	lb/MMBtu	4.62E-06	1.22E-06
Metals				
Arsenic	4.0	lb/10 ¹² Btu	4.98E-06	1.32E-06
Beryllium	3.0	lb/10 ¹² Btu	3.73E-06	9.89E-07
Cadmium	3.0	lb/10 ¹² Btu	3.73E-06	9.89E-07
Chromium	3.0	lb/10 ¹² Btu	3.73E-06	9.89E-07
Copper	6.0	lb/10 ¹² Btu	7.47E-06	1.98E-06
Lead	9.0	lb/10 ¹² Btu	1.12E-05	2.97E-06
Mercury	3.0	lb/10 ¹² Btu	3.73E-06	9.89E-07
Manganese	6.0	lb/10 ¹² Btu	7.47E-06	1.98E-06
Nickel	3.0	lb/10 ¹² Btu	3.73E-06	9.89E-07
Selenium	15.0	lb/10 ¹² Btu	1.87E-05	4.95E-06
Zinc	4.0	lb/10 ¹² Btu	4.98E-06	1.32E-06
HAPs (Total)			5.40E-03	1.43E-03
Maximum Individual HAP			3.47E-03	9.20E-04
Emissions based on fuel oil usage (gal/yr)			18,300	4,850

Source: Golder, 2009; EPA AP-42.

Organic Emissions (EPA AP-42, Table 3.4); Metal Emissions (EPA AP-42 Table 1.3)

**TABLE 3-11
PHYSICAL, PERFORMANCE AND EMISSION DATA
FOR THE MECHANICAL DRAFT COOLING TOWER**

Parameter	Value
<u>Physical Data</u>	
Number of Cells	3
Deck Dimensions, ft	
Length	96.5
Width	33.5
Height(Tower Height)	32.3
Stack Dimensions	
Height, ft	42.3
Stack Top Effective Inner Diameter, per cell, ft	21.5
Effective Diameter, all cells, ft	37.2
<u>Performance Data (per cell)</u>	
Discharge Velocity, ft/min	119
Circulating Water Flow Rate (CWFR), gal/min	1,118
Design hot water temperature, °F	91.9
Design cold water temperature, °F	75.8
Heat Rejected, million Btu/hr	TBD
Design Air Flow Rate per cell, acfm, (estimated)	43,353
Liquid/ Gas (Air Flow) (L/G) Ratio	1.028
Hours of operation	8,760
Temperature of Exit Air, °F	84
<u>Emission Data</u>	
Drift Rate ^a (DR), percent	0.0100
Total Dissolved Solids (TDS) Concentration ^b , average ppm	10,000
Solution Drift ^c (SD), lb/hr	55.7
PM, lb/hr ^d	0.56
TPY	2.4
PM ₁₀ , lb/hr	0.086
TPY ^e	0.38

^a Drift rate is the percent of circulating water.

^b The TDS values assumed are conservative and include cycling.

^c Includes water and based on circulating water flow rate and drift rate
(CWFR x DR x 8.3 lb/gal x 60 min/hr).

^d PM calculated based on total dissolved solids and solution drift (TDS x SD).

^e PM₁₀ based on Calculating Realistic PM₁₀ Emissions from Cooling Towers, Joel Reisman and Gordon Frisbie. See Appendix A.

Source: Golder, 2009.

Table 5-1 National and State AAQS, and Significant Impact Levels

Pollutant	Averaging Time	AAQS ($\mu\text{g}/\text{m}^3$)		Significant Impact Levels ($\mu\text{g}/\text{m}^3$) ^e
		Primary Standard	Secondary Standard	
Particulate Matter ^a (PM _{2.5})	Annual Arithmetic Mean	15	15	NA
	24-Hour Maximum	35	35	NA
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	50	50	1
	24-Hour Maximum ^b	150	150	5
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	1
	24-Hour Maximum ^c	365	NA	5
	3-Hour Maximum	NA	1,300	25
Carbon Monoxide ^c	8-Hour Maximum	10,000	10,000	500
	1-Hour Maximum	40,000	40,000	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	1
Ozone ^d	8-Hour Maximum	147	147	NA
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	NA

Note: Particulate matter (PM_{2.5}) = particulate matter with aerodynamic diameter less than or equal to 2.5 micrometers.

Particulate matter (PM₁₀) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.

NA = Not applicable, i.e., no standard exists.

^(a) The 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 $\mu\text{g}/\text{m}^3$. The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 $\mu\text{g}/\text{m}^3$ (effective December 17, 2006).

^(b) Not to be exceeded more than once per year on average over 3 years.

^(c) Not to be exceeded more than once per year.

^(d) The 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective 60 days after publication in the Federal Register).

^(e) Maximum concentrations are not to be exceeded.

Sources: Federal Register, Vol. 43, No. 118, June 19, 1978.; 40 CFR 50; 40 CFR 52.21.; COMAR 26.11.04.

TABLE 5-2
MAJOR FEATURES OF THE AERMOD MODEL, VERSION 07026

AERMOD Model Features
<ul style="list-style-type: none"> • Plume dispersion/growth rates are determined by the profile of vertical and horizontal turbulence, vary with height, and use a continuous growth function. • In a convective atmosphere, uses three separate algorithms to describe plume behavior as it comes in contact with the mixed layer lid; in a stable atmosphere, uses a mechanically mixed layer near the surface. • Polar or Cartesian coordinate systems for receptor locations can be included directly or by an external file reference. • Urban model dispersion is input as a function of city size and population density; sources can also be modeled individually as urban sources. • Stable plume rise: uses Briggs equations with winds and temperature gradients at stack top up to half-way up to plume rise. Convective plume rise: plume superimposed on random convective velocities. • Procedures suggested by Briggs (1974) for evaluating stack-tip downwash. • Has capability of simulating point, volume, area, and multi-sized area sources. • Accounts for the effects of vertical variations in wind and turbulence (Brower et al., 1998). • Uses measured and computed boundary layer parameters and similarity relationships to develop vertical profiles of wind, temperature, and turbulence (Brower et al., 1998). • Concentration estimates for 1-hour to annual average times. • Creates vertical profiles of wind, temperature, and turbulence using all available measurement levels. • Terrain features are depicted by use of a controlling hill elevation and a receptor point elevation. • Modeling domain surface characteristics are determined by selected direction and month/season values of surface roughness length, albedo, and Bowen ratio. • Contains both a mechanical and convective mixed layer height, the latter based on the hourly accumulation of sensible heat flux. • The method of Pasquill (1976) to account for buoyancy-induced dispersion. • A default regulatory option to set various model options and parameters to EPA-recommended values. • Contains procedures for calm-wind and missing data for the processing of short term averages.

Note: AERMOD = The American Meteorological Society and EPA Regulatory Model.

Source: Paine et al., 2007.

TABLE 5-3
SOURCE STACK PARAMETERS, FB ENERGY POWER PLANT

Source Description	MODEL ID	UTM Coordinates ^a		Physical				Operating			
		East (m)	North (m)	Height		Diameter		Temperature		Velocity	
				(ft)	(m)	(ft)	(m)	(°F)	(K)	(ft/s)	(m/s)
Boiler	BOILER	347,900	3,056,165	145.00	44.20	9.30	2.83	300	422	62.60	19.08
Cooling Tower	COOL01-COOL03	347,954	3,056,110	42.29	12.89	21.50	6.55	84	302	2.99	0.91
Stackout Baghouse (S4, S5, S6 & S7)	S4_S7	347,879	3,055,986	50.00	15.24	0.50	0.15	ambient	ambient	60.00	18.29
Reclaim Baghouse (R2 & R3)	R2_R3	347,817	3,056,032	50.00	15.24	0.50	0.15	ambient	ambient	60.00	18.29
Ash Bin Vent Filter (A1)	A1	347,880	3,056,160	25.00	7.62	0.50	0.15	ambient	ambient	53.00	16.15
Day Bin Vent Filters (R5 & R6)	R5_R6	347,926	3,056,154	25.00	7.62	0.50	0.15	ambient	ambient	53.00	16.15
Sorbent Bin Vent Filters (B2)	B2	347,938	3,056,194	25.00	7.62	0.50	0.15	ambient	ambient	53.00	16.15
Emergency Generator	NA	--	--	25.00	7.62	0.50	0.15	942	779	326.30	99.46
Firewater Pump	NA	--	--	25.00	7.62	0.58	0.18	854	730	139.90	42.64
Volume Sources											
				Release Height		Side Length		Initial Sigma y		Initial Sigma Z	
				(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)
Truck Traffic Wood Delivery (S1) ^f	TRUCK01-TRUCK30	347,736	3,055,625	7.87	2.40	39.37	12.00	23.33	7.11	7.32	2.23
Truck Traffic Silo Delivery (B1 & A3) ^f	TRUCK24-TRUCK35	347,736	3,055,625	7.87	2.40	39.37	12.00	23.33	7.11	7.32	2.23
Hopper to covered conveyor transfer point (S3)	S3	347,917	3,055,973	10.00	3.05	18.08	5.51	4.20	1.28	4.65	1.42
Conveyor to stacker (S8) and stacker to pile (S9)	S8_S9	347,818	3,055,961	25.00	7.62	38.68	11.79	9.00	2.74	38.15	11.63
Loading trucks with ash (A2)	A2	347,873	3,056,162	10.00	3.05	32.81	10.00	2.33	0.71	15.26	4.65
Conveyor 2 to conveyor 3 (R4)	R4	347,817	3,056,150	25.00	7.62	38.68	11.79	9.00	2.74	38.15	11.63
Area Sources											
				Release Height		Length of X Side		Length of Y Side			
				(ft)	(m)	(ft)	(m)	(ft)	(m)		
Open Pile (S10) and pile maintenance frontend loader (PM) and chain drag to reclaim conveyor (R1) ^f	S10	347,818	3,055,961	20.00	6.10	164.21	50.05	65.62	20.00		
Truck dump (S2)	S2	347,882	3,055,961	0.00	0.00	98.20	29.93	42.42	12.93		

^a UTM Zone 17, North American Datum 83

^b HRSG operating parameters based on 95°F ambient temperature

^c Sigma Y value may vary from 7.11 - 10.84 meters. Sigma Y is based on the center to center to distance of each volume source, divided by 2.15.

^d Pile release height set equal to half the pile height

TABLE 5-4
SOURCE EMISSIONS, FB ENERGY POWER PLANT

MODEL ID	PM ₁₀		SO ₂		NO _x		CO	
	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)
BOILER	7.57	0.95	12.14	1.53	15.1	1.91	22.7	2.86
COOL01-COOL03	0.090	0.011	--	--	--	--	--	--
S4_S7	5.29E-04	6.67E-05	--	--	--	--	--	--
R2_R3	1.00E-04	1.26E-05	--	--	--	--	--	--
A1	0.21	0.027	--	--	--	--	--	--
R5_R6	4.8E-04	6.0E-05	--	--	--	--	--	--
B2	0.0089	0.00113	--	--	--	--	--	--
Emergency Generator - not modeled	0.22	0.028	0.01	0.001	4.0	0.499	3.8	0.484
Firewater Pump - Not modeled	0.11	0.014	0.004	0.001	2.0	0.249	1.9	0.242
Volume Sources								
TRUCK01-TRUCK30	0.29	0.037	--	--	--	--	--	--
TRUCK24-TRUCK35	0.001	0.00013	--	--	--	--	--	--
S3	0.0040	0.00050	--	--	--	--	--	--
S8_S9	0.0080	0.0010	--	--	--	--	--	--
A2	4.60E-06	5.80E-07	--	--	--	--	--	--
R4	0.0014	0.00018	--	--	--	--	--	--
Area Sources								
S10	0.0466	0.0059	--	--	--	--	--	--
S2	6.7E-04	0.00008	--	--	--	--	--	--

TABLE 5-5
SOLID STRUCTURE DIMENSIONS, FB ENERGY POWER PLANT

Structure Description	Model ID	Height		Length (x-dir.)		Width (y-dir.)	
		(ft)	(m)	(ft)	(m)	(ft)	(m)
Boiler	BOILER	50.0	15.24	40.0	12.19	30.0	9.14
Auxiliary Equipment	AUXEQUIP	20.0	6.10	120.3	36.67	35.3	10.76
Chemical Storage	CHEMICAL	20.0	6.10	100.3	30.56	50.3	15.32
Cooling Tower	COOLTOW	32.3	9.85	66.6	20.31	210.0	64.02
Ash Silo ^a	ASHSILO	80.0	24.38	12.47	3.80	12.47	3.80
Turbine	TURBINE	45.0	13.72	80.28	24.47	150.2	45.79
Administration	ADMIN	20.0	6.10	100.0	30.48	50.0	15.24
Electrostatic Precipitator	ESP	50.0	15.24	45.4	13.85	43.8	13.36
Selective Catalytic Reduction	SCR	90.0	27.43	28.4	8.65	11.8	3.59

^a The Ash Silo is a circular building. Dimensions shown for length and width represent the diameter of the building.

TABLE 5-6
SUMMARY OF THE PM FACILITIES CONSIDERED FOR INCLUSION IN THE AIR MODELING ANALYSES

AIRS Number	Facility	County	UTM Coordinates (Zone 17)		Relative to FB Energy *				Maximum PM Emissions (TPY)	Q ₁ (TPY) Emission Threshold ^{bc} (Dist - SID) x 20	Include in Modeling Analysis?
			East (km)	North (km)	X (km)	Y (km)	Distance (km)	Direction (deg)			
Modeling Area ^d											
0810063	Ajax Paving Industries, Inc. - Palmetto Facility	Manatee	347.8	3056.6	-0.1	0.7	0.7	354	1.8	SIA	YES
Screening Area ^d											
0810024	Florida Power and Light Co. - Port Manatee Oil Storage Facility	Manatee	349.1	3056.5	1.2	0.6	1.3	62	4.4	11.2	NO
0810053	Eastern Cement Corp.	Manatee	347.9	3057.5	0.0	1.6	1.6	1	10.8	16.6	NO
0810001	Transmontaigne Product Services Inc.	Manatee	348.0	3057.7	0.1	1.8	1.8	2	7.3	21.6	NO
0810215	Gulfstream Natural Gas System, LLC	Manatee	350.4	3056.3	2.5	0.4	2.5	80	7.3	34.8	NO
0810067	Atlas-Transoil International, Inc.	Manatee	349.7	3058.0	1.8	2.1	2.7	40	36.1	39.6	NO
0810011	Vulcan Materials Company, Florida Cement, Inc. - Port Manatee	Manatee	346.0	3057.9	-1.9	2.0	2.8	317	21.6	40.2	NO
0810007	Tropicana Manufacturing Company, Inc.	Manatee	347.7	3042.3	-0.2	-13.6	13.6	181	245.1	257.4	NO
0810031	Pierce Manufacturing	Manatee	348.7	3038.8	0.8	-17.1	17.1	177	1.1	326.8	NO
0810201	Superior Asphalt, Inc.	Manatee	348.7	3037.5	0.8	-18.4	18.4	177	24.2	354.0	NO
1030095	Citrus Bay Energy Southeast, LLC	Pinellas	338.0	3072.1	-9.9	16.2	19.0	329	2.8	364.6	NO
0810055	Manatee County Utility Operations Dept.	Manatee	357.0	3039.1	9.1	-16.8	19.1	152	11.6	367.6	NO
0810010	Florida Power & Light (PMT)	Manatee	367.2	3054.2	19.3	-1.7	19.4	95	228.4	372.7	NO
7775055	Woodruff & Sons, Inc. - Soil Cement Plant #2	Manatee	350.7	3034.4	2.8	-21.5	21.7	173	7.3	419.4	NO
1030077	Times Publishing Co.	Pinellas	334.6	3074.6	-13.3	18.7	22.9	325	3.5	443.3	NO
0810030	Eaton Aerospace LLC	Manatee	348.2	3033.4	0.3	-22.5	22.5	179	4.4	435.0	NO
0570141	US Air Force (MACDILL AFB)	Hillsborough	353.8	3081.6	5.9	25.7	26.4	13	1.5	512.4	NO
1030011	Florida Power Corp., DBA Progress Energy FL	Pinellas	343.5	3082.7	-4.4	26.8	27.1	351	369.0	527.5	NO
0570008	Mosaic Fertilizer, LLC	Hillsborough	364.0	3082.3	16.1	26.4	30.9	31	114.0	603.9	NO
1030117	Pinellas Co. Board of Co. Commissioners	Pinellas	335.3	3084.3	-12.6	28.4	31.1	336	189.3	606.6	NO
7770073	APAC Southeast Inc., Central FL Division	Pinellas	334.3	3085.6	-13.6	29.7	32.7	335	4.5	638.3	NO
0570477	Martin Gas Sales, Inc.	Hillsborough	358.9	3086.8	11.0	30.9	32.8	20	2.3	641.4	NO
0570252	Cemex	Hillsborough	358.8	3086.9	10.9	31.0	32.9	19	62.3	642.2	NO
1030147	Sonny Glasbrenner, Inc.	Pinellas	334.3	3085.9	-13.6	30.0	33.0	336	3.2	644.7	NO
1030501	ITW Sprayco	Pinellas	331.8	3084.7	-16.1	28.8	33.0	331	48.7	644.9	NO
0571217	SEA 3 OF Florida, Inc.	Hillsborough	360.1	3087.1	12.2	31.2	33.5	21	1.6	655.0	NO
1150135	APAC Southeast, Inc. - University Asphalt Plant	Sarasota	363.0	3076.4	15.1	-29.5	33.1	153	34.5	647.4	NO
0570031	HOLCIM (US) Inc.	Hillsborough	359.6	3087.4	11.7	31.5	33.6	20	8.3	656.4	NO
0570024	Kinder Morgan OLP "C"	Hillsborough	360.2	3087.5	12.3	31.6	33.9	21	2.2	663.2	NO
0571290	Tarmac America, LLC (Titan America Bus.)	Hillsborough	359.4	3087.8	11.5	31.9	33.9	20	53.5	663.7	NO
0570040	Tampa Electric Company	Hillsborough	360.5	3087.5	12.6	31.6	34.0	22	368.2	664.5	NO
0571321	Port Sutton Environments, LLC	Hillsborough	361.9	3087.1	14.0	31.2	34.2	24	67.9	669.8	NO
1030216	Carpenter Technology Corp.	Pinellas	332.6	3087.3	-15.3	31.4	35.0	334	15.0	684.2	NO
0570018	Florida Rock Industries, Inc.	Hillsborough	357.9	3090.7	10.0	34.8	36.2	16	14.1	709.6	NO
0570373	City of Tampa - Wastewater Dept.	Hillsborough	364.0	3089.5	16.1	33.6	37.3	26	5.5	730.2	NO
0570226	Brenntag Mid-South, Inc.	Hillsborough	354.8	3092.8	6.9	36.9	37.5	11	2.2	735.8	NO
1150090	Sarasota Co. Board of County Comm.	Sarasota	362.0	3020.2	14.1	-33.7	38.4	159	12.6	753.0	NO
7775159	Woodruff & Sons, Inc. - Soil Cement Plant #3	Hillsborough	364.4	3093.2	16.5	37.3	40.8	24	7.0	800.2	NO
0570057	Envirofocus Technologies, LLC	Hillsborough	364.0	3093.5	16.1	37.6	41.0	23	4.2	804.0	NO
0570069	Industrial Galvanizers America, Inc.	Hillsborough	364.2	3094.8	16.3	38.9	42.1	23	40.6	827.6	NO
0570090	Master - Halco, Inc.	Hillsborough	368.2	3094.6	20.3	38.7	43.7	28	14.9	859.0	NO
1030091	Morton Plant Mease Health Care	Pinellas	323.0	3093.2	-24.9	37.3	44.9	326	2.1	882.6	NO
0570223	APAC Southeast, Inc. Central Florida Div.	Hillsborough	364.1	3098.1	16.2	42.2	45.2	21	2.1	888.8	NO
0570001	Johnson Controls Battery Group, Inc.	Hillsborough	359.9	3102.5	12.0	46.6	48.1	14	69.9	947.5	NO
Beyond Screening Area out to 100 km ^d											
1050059	Mosaic Fertilizer, LLC - New Wales Facility	Polk	396.6	3079.3	48.7	23.4	54.1	64	73.9	1066.2	NO
1050233	Tampa Electric Company	Polk	402.4	3067.4	54.5	11.5	55.7	78	306.6	1099.6	NO
0490015	Hardee Power Partners Limited	Hardee	404.9	3057.3	57.0	1.4	57.0	89	313.2	1125.6	NO
0490340	Seminole Electric Cooperative, Inc.	Hardee	405.1	3057.8	57.2	1.8	57.2	88	447.5	1129.6	NO
0490043	Vandolph Power Company, LLC	Hardee	408.8	3044.5	60.9	-11.4	61.9	101	164.0	1223.2	NO
1050157	Purina Mills, LLC	Polk	401.9	3087.0	54.0	31.1	62.4	60	28.3	1232.1	NO
1050341	Turner Coating Inc.	Polk	402.5	3086.7	54.6	30.8	62.7	61	20.3	1238.0	NO
1050053	Mosaic Fertilizer, LLC	Polk	409.3	3079.6	61.4	23.7	65.8	69	98.6	1301.1	NO
1050393	Kinder Morgan Operating LP "C"	Polk	408.3	3082.5	60.4	26.6	66.0	66	22.5	1305.0	NO
1050352	Lakeland Electric	Polk	400.1	3100.7	52.2	44.8	68.8	49	340.0	1360.3	NO
1050234	Florida Power Corp. DBA Progress Energy, FL	Polk	414.3	3074.0	66.4	18.1	68.8	75	542.0	1361.6	NO
1050046	Mosaic Fertilizer, LLC	Polk	409.7	3087.2	61.8	31.3	69.2	63	271.5	1369.8	NO
1050223	Florida Power Corp. DBA Progress Energy, FL	Polk	416.2	3069.3	68.3	13.4	69.6	79	78.8	1377.8	NO
1050415	Drum Recyclers, Inc.	Polk	420.4	3071.7	72.5	15.8	74.2	78	11.0	1468.8	NO
1050099	AOC, LLC	Polk	401.0	3108.8	53.1	52.9	75.0	45	35.8	1484.1	NO
1050231	Orange Cogeneration Limited Partnership	Polk	418.7	3083.0	70.8	27.1	75.8	69	48.2	1501.2	NO
1050045	Bartow Citrus Products, LLC	Polk	418.6	3083.5	70.7	27.6	75.9	69	113.9	1503.2	NO
1050003	Lakeland Electric	Polk	409.0	3102.8	61.1	46.9	77.0	52	509.6	1526.0	NO
0270003	Peace River Citrus Products	Desoto	409.8	3010.3	61.9	-45.6	76.8	126	45.0	1521.8	NO
1050330	Fort Meade Forest Products	Polk	410.4	3102.8	62.5	46.9	78.1	53	10.0	1547.5	NO
1050004	Lakeland Electric - C.D. McIntosh, Jr. Power Plant	Polk	408.9	3106.7	61.0	50.8	79.4	50	2,352.3	1572.5	NO
1050400	The Lane Construction Corp.	Polk	392.5	3123.9	44.6	68.0	81.3	33	10.2	1611.4	NO
1010373	Shady Hills Power Company, LLC	Pasco	347.0	3139.0	-9.9	83.1	83.1	359	161.7	1647.1	NO
0270016	Desoto County Generating Company, LLC	Desoto	419.8	3011.8	71.9	-44.1	84.4	121	114.0	1672.2	NO
1050221	APP, LP, APEC, LLC, CCFC	Polk	420.9	3103.2	73.0	47.3	87.0	57	348.5	1724.9	NO
1050017	Spectrum Brands, Inc.	Polk	428.0	3097.4	80.1	41.5	90.2	63	367.7	1789.2	NO
1010002	Vitality Foodservice Inc.	Pasco	383.5	3139.4	35.6	83.5	90.8	23	49.6	1800.2	NO
0530357	D.A.B. Constructors Inc.	Hernando	358.5	3151.4	10.6	95.5	96.1	6	25.1	1907.0	NO
1050002	Citrus World, Inc.	Polk	440.9	3087.4	93.0	31.5	98.2	71	180.1	1949.6	NO

Note: SID = Significant impact distance for the project, SIA = Significant Impact Area

* FB Energy UTM East and North Coordinates (km) in Zone 17 are:

347.9 3,055.9

^b The significant impact distance for the project is estimated to be:

0.75 km

^c Based on the North Carolina Screening Threshold method, a background facility is included in the modeling analysis if the facility is beyond the modeling area and its emission rate is greater than the product of (Distance-SID) x 20.

^d "Modeling Area" is the area in which the project is predicted to have a significant impact at each mill (approximately 0.75 km). EPA recommends that all sources within this area be modeled.

"Screening Area" is the assumed significant distance of 0.75 km plus 50 km beyond the modeling area. EPA recommends that sources be modeled that are expected to have a significant impact in the modeling area. "Beyond Screening Area" is the distance from 50 km out to 100 km in which large sources are included in the modeling.

TABLE 5-7
SUMMARY OF PM₁₀ SOURCES INCLUDED IN THE AAQS AND PSD CLASS II MODELING ANALYSES

Facility ID	Facility Name Emission Unit Description	EU ID	Modeling ID Name	UTM Location		Stack Parameters								PM ₁₀ Emission Rate		PSD Source? ^a (EXP/CON)	Modeled In	
				X	Y	Height		Diameter		Temperature		Velocity		24-Hour/Annual			AAQS	Class II
				(m)	(m)	ft	m	ft	m	°F	K	ft/s	m/s	(lb/hr)	(g/sec)			
0810063	Ajax Paving Industries, Inc. - Palmetto Facility																	
	Drum Mix Asphalt Plant with Baghouse	001	APIDRUM	347,830	3,056,590	34.0	10.36	2.3	0.70	300.0	422.04	139.2	42.4	1.31	0.17	CON	Yes	Yes
	Hot Oil Heater (Exempt)	002	APIOLHTR	347,830	3,056,590	10.0	3.05	0.8	0.25	68.0	293.15 ^b	15.0	4.6 ^b	0.011	0.0014	CON	Yes	Yes
	Reclaimed Asphalt Pavement (RAP) Crushing System	003	APIRAP	347,830	3,056,590	15.0	4.57 ^b	5.0	1.52 ^b	68.0	293.15 ^b	15.0	4.6 ^b	0.40	0.05	CON	Yes	Yes

Note: EXP = PSD expanding source.

CON = PSD consuming source.

NO = Baseline Source, assuming potential baseline emissions are the same as current actual emissions.

^a Where data was missing, a height of 15 ft, diameter of 5 ft, velocity of 15 ft/s and temperature of 68°F (ambient) were assumed unless other information was available.

TABLE 5-8
NON-MODELED BACKGROUND CONCENTRATIONS USED FOR THE MODELING ANALYSIS

Pollutant	Site Name	Year	Site ID	County	Annual Mean ($\mu\text{g}/\text{m}^3$)	24-Hour Maximum ($\mu\text{g}/\text{m}^3$)	
						1st	2nd
PM ₁₀	Holland House - 100 Yds E of US41 on Buckeye Road	2006	12-081-0008	Manatee	24	69	49
	Holland House - 100 Yds E of US41 on Buckeye Road	2007	12-081-0008	Manatee	28	111	87
	Holland House - 100 Yds E of US41 on Buckeye Road	2008	12-081-0008	Manatee	20	37	32

Boxed values were selected as non-modeled background concentrations for the NAAQS.

TABLE 5-9
SUMMARY OF MAXIMUM CONCENTRATIONS PREDICTED FOR PROPOSED PROJECT
COMPARED TO EPA CLASS II SIGNIFICANT IMPACT LEVELS

Pollutant	Averaging Time	Maximum Concentration ($\mu\text{g}/\text{m}^3$)^a	EPA Class II Significant Impact Levels ($\mu\text{g}/\text{m}^3$)
SO ₂	Annual	0.14	1
	24-Hour	1.10	5
	3-Hour	2.67	25
PM ₁₀	Annual	7.4	1
	24-Hour	19.4	5
NO _x ^b	Annual	0.13	1
CO	8-Hour	3.8	500
	1-Hour	5.9	2,000

^a Concentrations are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2001 to 2005 consisting of surface and upper air data from the National Weather Service stations at Sarasota-Bradenton Airport and Tampa International Airport, respectively.

^b NO_x to NO₂ conversion factor of 0.75 applied to modeled NO_x impacts based on EPA Modeling Guidelines.

TABLE 5-10
SUMMARY OF MAXIMUM CONCENTRATIONS PREDICTED FOR PROPOSED
PROJECT WITHIN 50 KM IN THE DIRECTION OF CHASSAHOWITZKA NWA
COMPARED TO EPA CLASS I SIGNIFICANT IMPACT LEVELS

Pollutant	Averaging Time	Maximum Concentration ($\mu\text{g}/\text{m}^3$)^{a, b}	EPA Class I Significant Impact Levels ($\mu\text{g}/\text{m}^3$)
SO ₂	Annual	0.0010	0.1
	24-Hour	0.024	0.2
	3-Hour	0.14	1.0
PM ₁₀	Annual	0.00084	0.2
	24-Hour	0.017	0.3
NO _x ^b	Annual	0.0010	0.1

^a Concentrations at the Wolf Island NWA are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2001 to 2005 consisting of surface and upper air data from the National Weather Service stations at Sarasota-Bradenton Airport and Tampa International Airport, respectively.

^b NO_x to NO₂ conversion factor of 0.75 applied to modeled NO_x impacts based on EPA Modeling Guidelines

TABLE 5-11
MAXIMUM PREDICTED PM₁₀ IMPACTS FOR ALL SOURCES, COMPARED TO THE AAQS

Averaging Time and Rank	Maximum Concentration (µg/m ³) ^a			Receptor Location		Time Period (YYMMDDHH)	AAQS (µg/m ³)
	Total	Modeled Sources	Background	UTM- East (m)	UTM- North (m)		
Annual, Highest	35.1	7.1	28	347,727	3,055,953	01123124	50
	35.5	7.5	28	347,727	3,055,953	02123124	
	35.4	7.4	28	347,727	3,055,953	03123124	
	35.3	7.3	28	347,727	3,055,953	04123124	
	34.8	6.8	28	347,727	3,055,953	05123124	
24-Hour, H6H	111.7	24.7	87	347,750	3,056,550	03100824	150

Note: YYMMDDHH = Year, Month, Day, Hour Ending

HSH = Highest, second-highest

H6H = Highest, sixth-highest

^a Concentrations are based on highest predicted concentrations from AERMOD using five years of meteorological data for 2001 to 2005 consisting of surface and upper air data from the National Weather Service stations at Sarasota-Bradenton Airport and Tampa International Airport, respectively.

FIGURES



**Florida Biomass Energy
Manatee County Biomass Project**

Airport Manatee

LEGEND

Property Boundary



1 0.5 0 1
Miles
SCALE: 1 in = 1 Mile

REFERENCE

Base map: StreetMap USA (2007)
Property Boundary Lines: Manatee County; County Boundary: US Census Bureau
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: State Plane Florida West

PROJECT

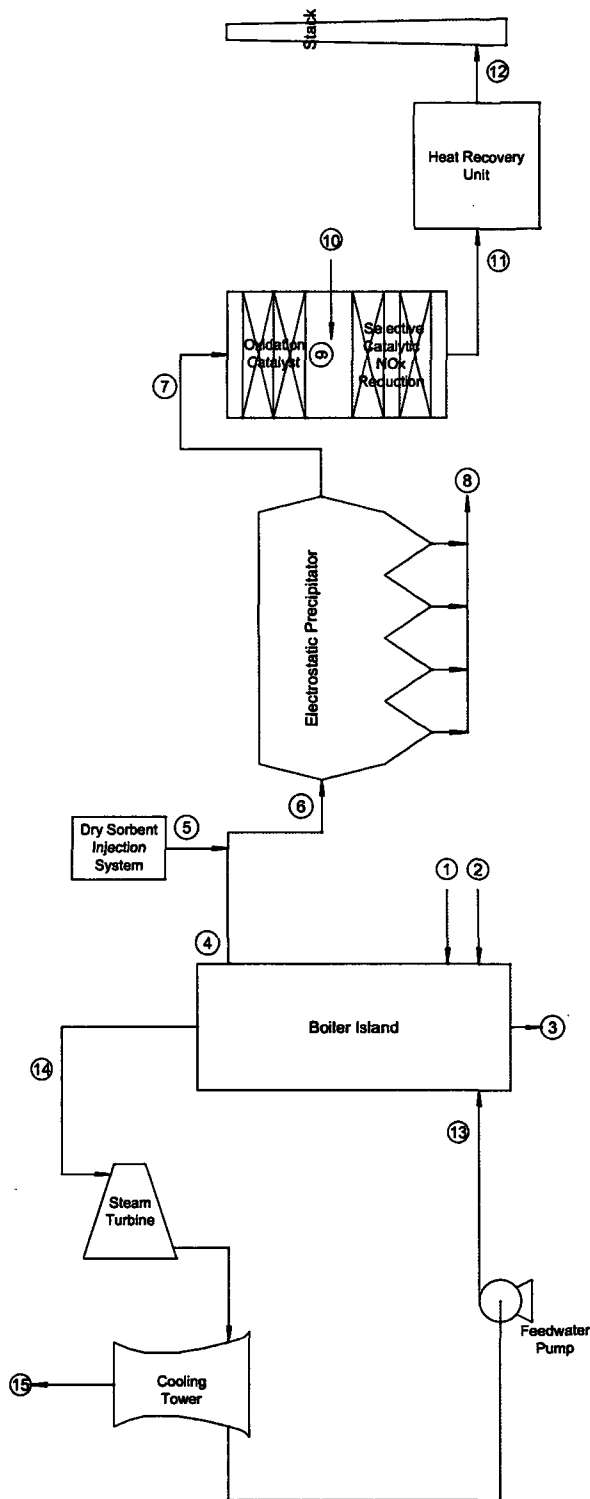
**FLORIDA BIOMASS ENERGY
MANATEE COUNTY BIOMASS PROJECT**

TITLE

SITE LOCATION



MXD File No. 093-89603A001	SCALE AS SHOWN	REV. 0
DESIGN DLH 4 Sept 2009	FIGURE 2.1	
GIS DLH 4 Sept 2009		
CHECK MHS 9 Sept 2009		
REVIEW SO 9 Sept 2009		



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Name	Fuel	Air	Boiler Ash	Boiler Exit	Sorbent	ESP In	ESP Out	ESP Ash	Cat In	Ammonia	SCR Out	Stack	Feedwater	Steam	CT Exhaust
Temperature, °F	Ambient	Ambient		600	Ambient	595	590		590		590	300	440	955	
Pressure, psig	Ambient	Ambient	441												
Total Flow, lb/hr	897,541			629,767	24,452	833,870	868,665	426	888,673	12,056	900,714	900,714	560,000	560,000	8,908,901
H ₂ , lb/hr	533,046			533,297	18,559	551,794	578,405		578,405	8,830	587,207	587,207			2,048,300
O ₂ , lb/hr	181,024			37,159	5,544	42,775	50,870		50,703	2,367	53,378	53,375			8,812,700
H ₂ O, lb/hr	3,470			97,604	120	97,524	97,437		97,483	582	98,095	98,095	560,000	560,000	41,600
CO ₂ , lb/hr				181,522		181,522	181,605		181,868		181,868	181,868			
CO, lb/hr				135		135	135		21.5		21.5	21.5			
VOC, lb/hr				13.5		13.5	13.5		3.2		3.2	3.2			
NO _x , lb/hr				185		185	185		168		15.0	15.0			
SO ₂ , lb/hr				52.1		52.1	22.4		22.4		22.4	22.4			
HCl, lb/hr				18.8		18.8	2.3		2.3		2.3	2.3			
NH ₃ , lb/hr				0		0	0		0	94.0	5.4	5.4			
PM, lb/hr				441	289										
H ₂ CO ₃ , lb/hr					229		375	8.8	428	8.8		8.8	8.8		1.4

PROJECT

FLORIDA BIOMASS ENERGY MANATEE COUNTY BIOMASS PROJECT

TITLE

PROCESS FLOW DIAGRAM



Golder Associates
Tampa, Florida

PROJECT No.093-89603

FILE No.09389603B003

DESIGN

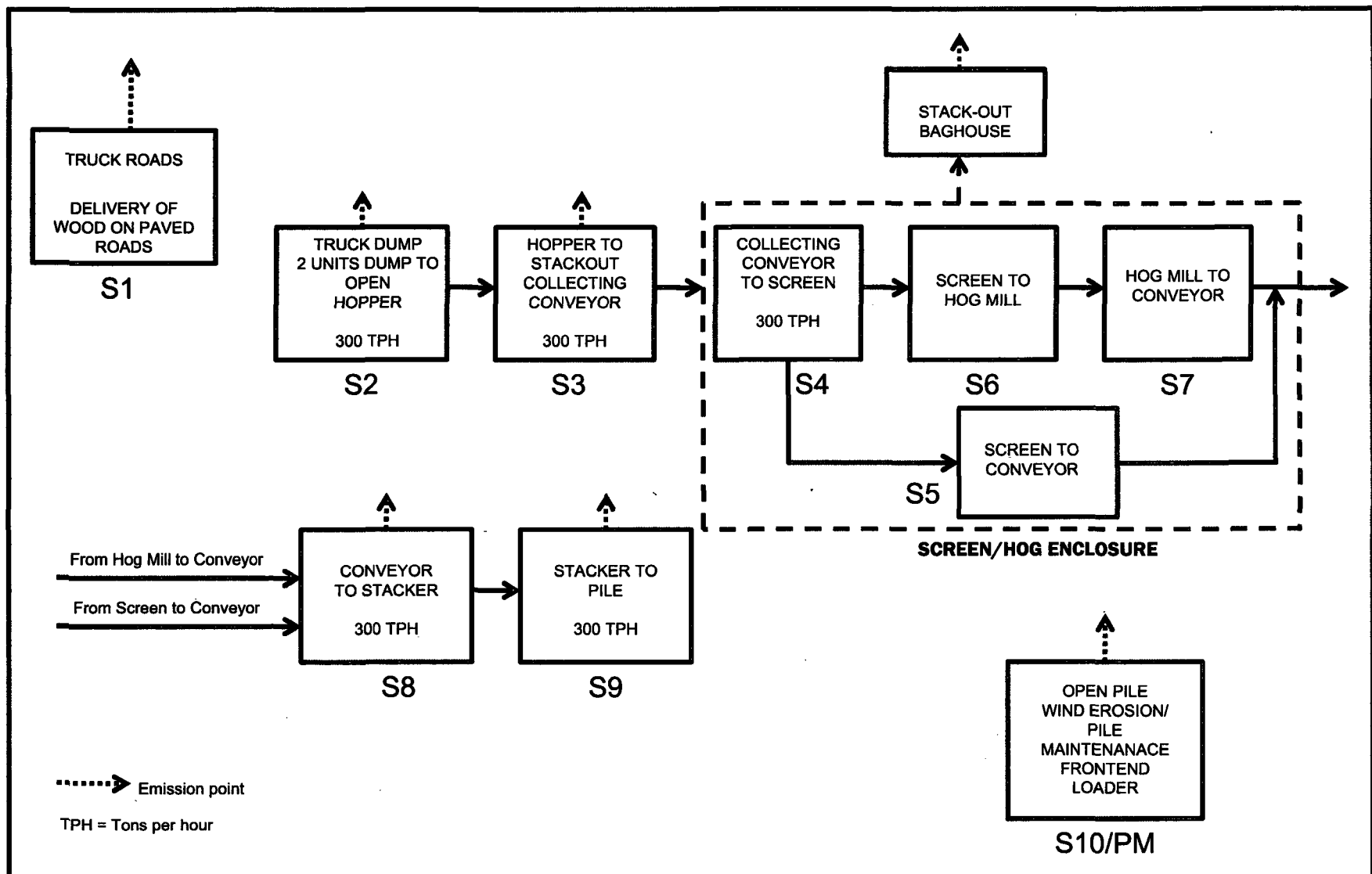
SCALE As Shown REV. 0


CADD EKN 9/11/09

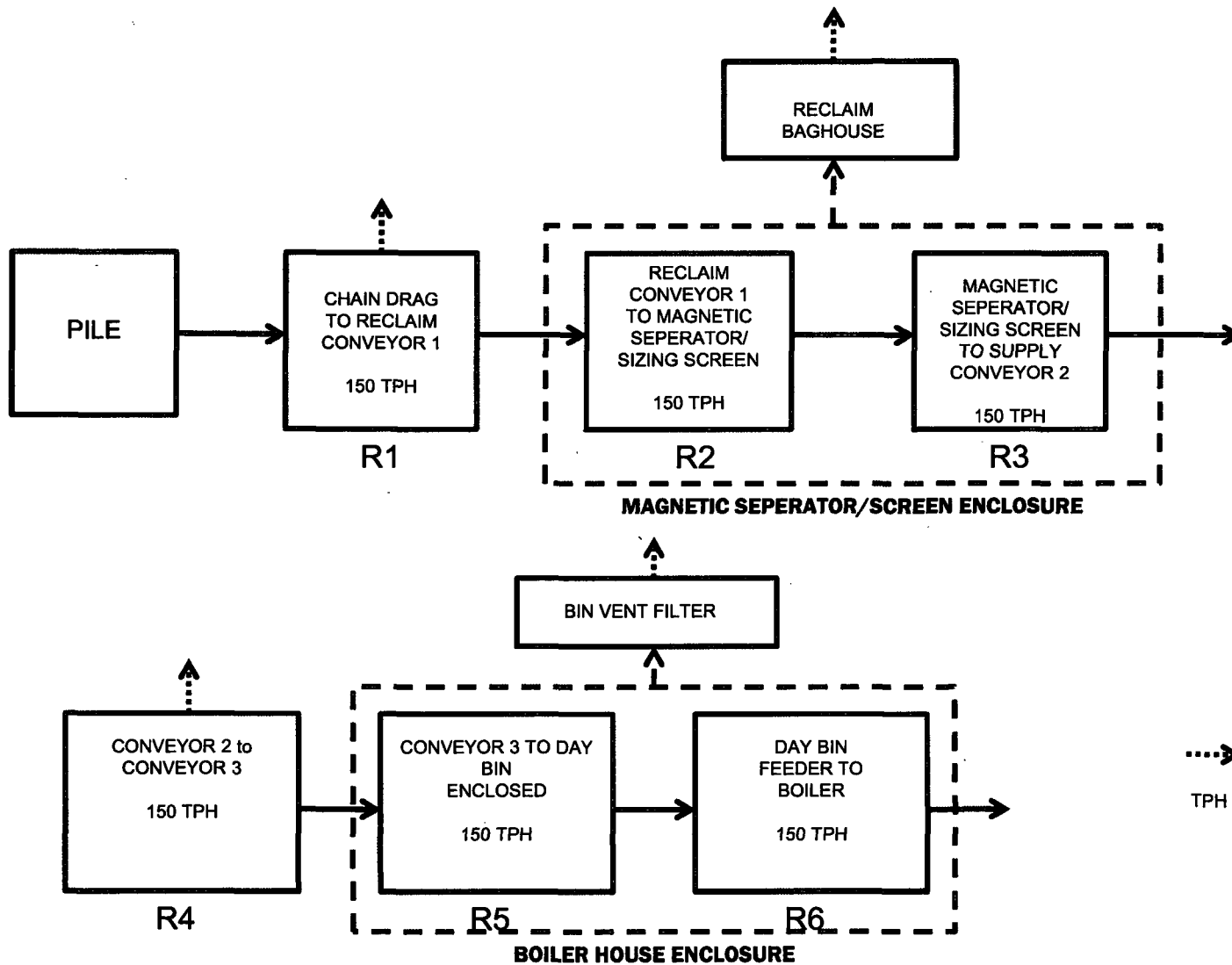
CHECK PP 9/11/09


REVIEW

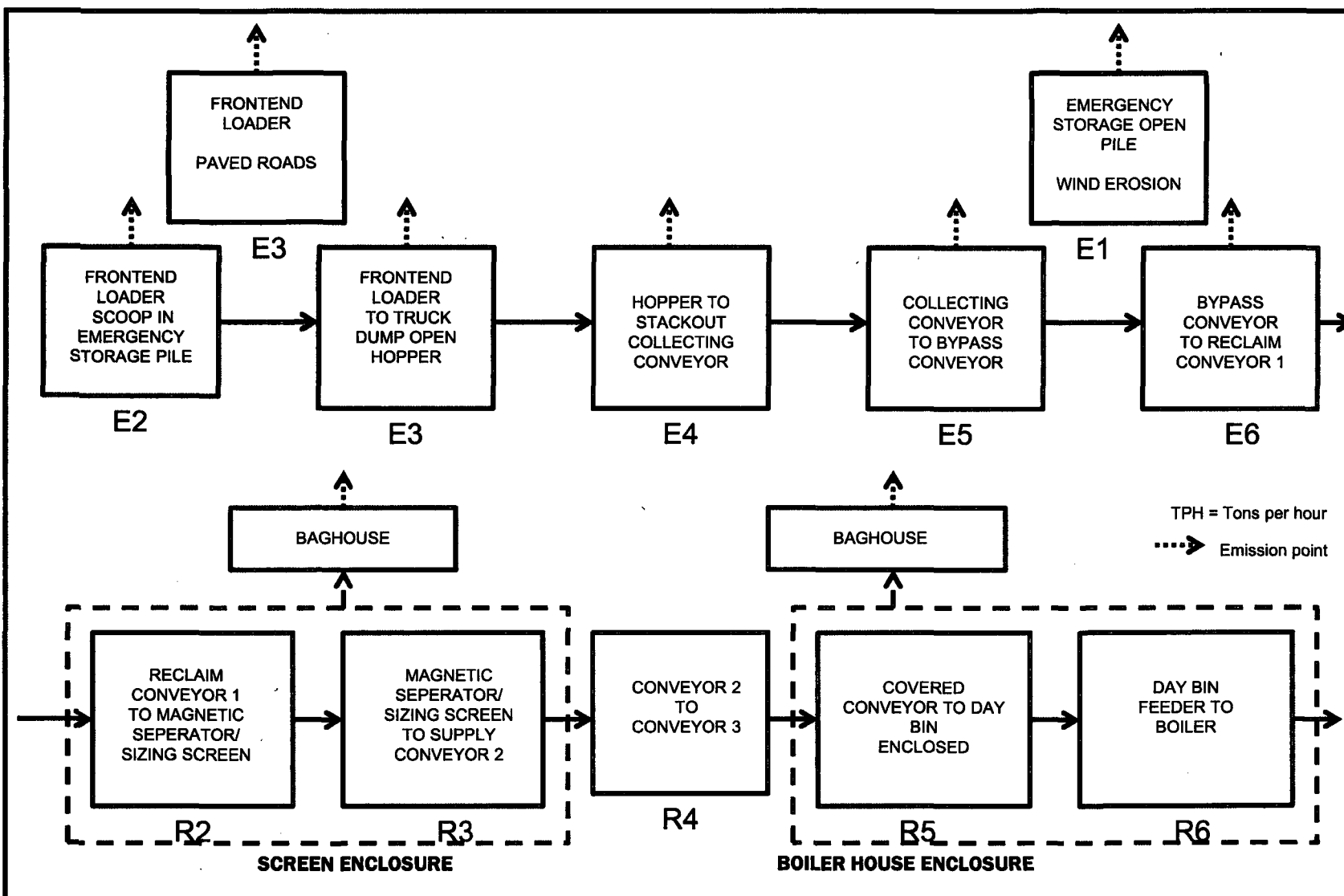
FIGURE 2.3




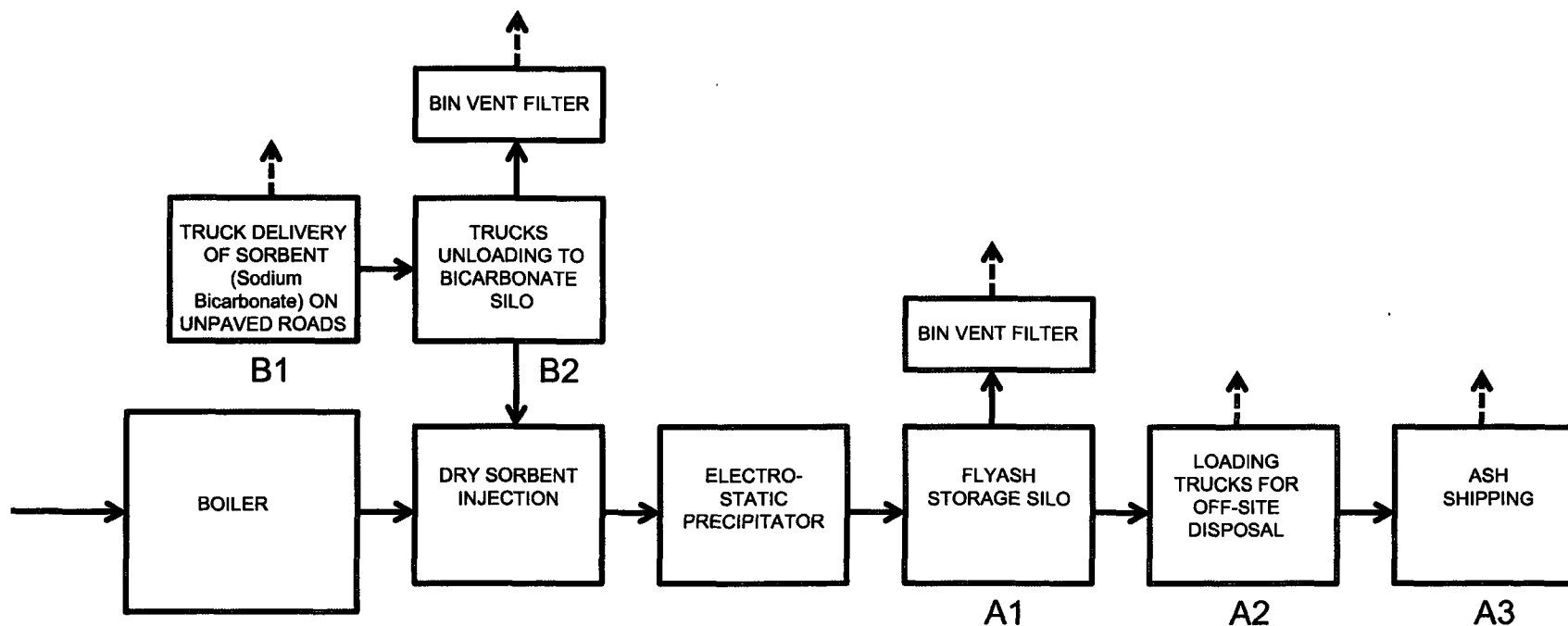
CLIENT/PROJECT Florida Biomass Energy LLC				 TAMPA, FLORIDA Golder Associates				TITLE Figure 2.4 Material Handling Emission Points (Stack - out)			
DRAWN	CHECKED	REVIEWED	DATE 10/7/2009	NOT TO SCALE	FILE NO.	Job No. 093-89603	DWG NO.	SUBTITLE	REV. NO.		




CLIENT/PROJECT Florida Biomass Energy LLC				TAMPA, FLORIDA			TITLE Figure 2.5 Material Handling Emission Points (Reclaim)			
				 Golder Associates						
DRAWN	CHECKED	REVIEWED	DATE 10/7/2009	NOT TO SCALE	FILE NO.	Job No. 093-89603	DWG NO.	SUBTITLE	REV. NO.	



CLIENT/PROJECT Florida Biomass Energy LLC				 TAMPA, FLORIDA Golder Associates				TITLE Figure 2.6 Material Handling Emission Points (Emergency Short-Term Fuel Feed System)			
DRAWN	CHECKED	REVIEWED	DATE 10/7/2009	NOT TO SCALE	FILE NO.	Job No. 093-89603	DWG NO.	SUBTITLE	REV. NO.		



--> Emission point

CLIENT/PROJECT Florida Biomass Energy LLC				TAMPA, FLORIDA			TITLE Figure 2.7 Material Handling, Storage, and Shipment Process			
				 Golder Associates						
DRAWN	CHECKED	REVIEWED	DATE 10/5/2009	NOT TO SCALE	FILE NO.	Job No. 093-89603	DWG NO.	SUBTITLE	REV. NO.	

APPLICATION FORMS



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

RECEIVED

OCT 13 2009

To ensure accuracy, please see form instructions. BUREAU OF AIR REGULATION

Identification of Facility

1. Facility Owner/Company Name: Florida Biomass Energy, LLC	
2. Site Name: FBenergy Manatee Facility, LLC	
3. Facility Identification Number:	
4. Facility Location... Street Address or Other Locator: 11805 US 41N City: Palmetto County: Manatee Zip Code: 34221	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Application Contact

1. Application Contact Name: Rick Jensen, President	
2. Application Contact Mailing Address... Organization/Firm: FBenergy, LLC Street Address: 9040 Town Center Parkway City: Bradenton State: FL Zip Code: 34202	
3. Application Contact Telephone Numbers... Telephone: (941) 567 - 1631 ext. Fax: () -	
4. Application Contact E-mail Address: rjensen@fbenergy.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

- ☒ Air construction permit.
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- ☐ Initial Title V air operation permit.
- ☐ Title V air operation permit revision.
- ☐ Title V air operation permit renewal.
- ☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- ☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- ☐ Air construction permit and Title V permit revision, incorporating the proposed project.
- ☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- ☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

FBE is developing a renewable energy facility to provide approximately 60 megawatts (MW) of "green" electricity under a 20 year contract to a Florida utility. Wood waste (feedstock) locally sourced will be used to generate the electricity for the local grid. The project will consist of the construction of a boiler, an emergency generator, a material handling system, a fire water pump system, and two mechanical draft cooling towers.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
001	Boiler		4,500
002	Emergency Generator		250
003	Cooling Tower		250
004	Material Handling		1,000
005	Fire Pump		250

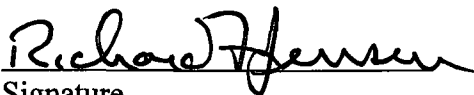
Application Processing Fee

Check one: ☒ Attached - Amount: \$ 6,250 ☐ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : Rick Jensen, President
2. Owner/Authorized Representative Mailing Address... Organization/Firm: FBenergy, LLC Street Address: 9040 Town Center Parkway City: Bradenton State: FL Zip Code: 34202
3. Owner/Authorized Representative Telephone Numbers... Telephone: (941) 567 - 1631 ext. Fax: () -
4. Owner/Authorized Representative E-mail Address: RJENSEN@FBENERGY.COM
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i> <div style="display: flex; justify-content: space-between;"><div> Signature</div><div><u>10/7/09</u> Date</div></div>

APPLICATION INFORMATION


Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
5. Application Responsible Official E-mail Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i> Signature _____ Date _____

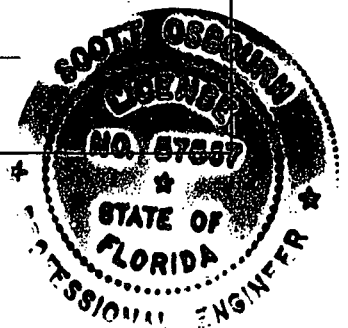
APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Scott H. Osbourn Registration Number: 57557
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc. ** Street Address: 5100 West Lemon Street, Suite 114 City: Tampa State: FL Zip Code: 33609
3. Professional Engineer Telephone Numbers... Telephone: (813) 287-1717 ext. 53304 Fax: (813) 287-1716
4. Professional Engineer E-mail Address: sosbourn@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> <div style="display: flex; justify-content: space-between;"><div>Signature  (seal)</div><div>Date <u>10/8/09</u></div></div>

* Attach any exception to certification statement.

** Board of Professional Engineers Certificate of Authorization #00001670



II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 16 East (km) 347.8 North (km) 3056.2		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 27/37/14 Longitude (DD/MM/SS) 82/32/29	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4911
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: See application contact (page 1)			
2. Facility Contact Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:			
3. Facility Contact Telephone Numbers: Telephone: () - ext. Fax: () -			
4. Facility Contact E-mail Address:			

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name: See application contact (page 1)			
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:			
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -			
4. Facility Primary Responsible Official E-mail Address:			

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1.	<input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2.	<input type="checkbox"/> Synthetic Non-Title V Source	
3.	<input checked="" type="checkbox"/> Title V Source	
4.	<input type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5.	<input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6.	<input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7.	<input type="checkbox"/> Synthetic Minor Source of HAPs	
8.	<input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9.	<input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10.	<input type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11.	<input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12.	Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM	A	N
PM ₁₀	A	N
SO ₂	A	N
NO _x	A	N
CO	A	N
VOC	A	N

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility- Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date: _____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date: _____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date: _____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u>
4. List of Exempt Emissions Units: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application)
2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan: (Required for all initial/revision/renewal applications) <input type="checkbox"/> Attached, Document ID: _____ Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities Onsite but Not Required to be Individually Listed <input type="checkbox"/> Not Applicable
5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
6. Requested Changes to Current Title V Air Operation Permit: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):

☒ Attached, Document ID: **FB-FI-C1** ☐ Previously Submitted, Date: _____

☐ Not Applicable (not an Acid Rain source)

Phase II NO_x Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):

☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____

☐ Not Applicable

New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):

☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____

☐ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):

☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____

☒ Not Applicable (not a CAIR source)

3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):

☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____

☒ Not Applicable (not a Hg Budget unit)

Additional Requirements Comment

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

A. GENERAL EMISSIONS UNIT INFORMATION**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

757 MMBtu/hr wood fueled Boiler – Grate type Suspension Boiler

Biodiesel fuel used for startup.

3. Emissions Unit Identification Number:

4. Emissions Unit
Status Code:

5. Commence
Construction
Date: **4/2010**

6. Initial Startup
Date: **4/2012**

7. Emissions Unit
Major Group
SIC Code:

49

8. Federal Program Applicability: (Check all that apply)

☒ Acid Rain Unit

☐ CAIR Unit

☐ Hg Budget Unit

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: **MW 60 (net)**

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description:
Dry Sorbent Injection

2. Control Device or Method Code: **206**

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description:
Electrostatic precipitator (ESP)

2. Control Device or Method Code: **128**

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description:
Oxidation Catalyst

2. Control Device or Method Code: **109**

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description:
Selective catalytic NOx reduction (SCR)

2. Control Device or Method Code: **139**

EMISSIONS UNIT INFORMATION

Section [1] of [5]
Grate-type Suspension Boiler – 1A

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:
2. Maximum Production Rate:
3. Maximum Heat Input Rate: 757 million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: See Report		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V		6. Stack Height: 145 feet	
		7. Exit Diameter: 9.3 feet	
8. Exit Temperature: 300 °F		9. Actual Volumetric Flow Rate: 265,972 acfm	
		10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: Dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: See Table 5-3 in Report for stack parameter information.			

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate: Segment 1 of 2**

1. Segment Description (Process/Fuel Type): Biodiesel		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): Wood		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

E. EMISSIONS UNIT POLLUTANTS**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			NS
NOX			NS
PM/PM10			Subpart Db
SO2			NS
VOC			NS

EMISSIONS UNIT INFORMATION

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Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS****(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 22.3 lb/hour 97.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.0295 lb/MMBtu Reference: Vendor data		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.0295 lb/MMBtu x 757 MMBtu/hr = 22.3 lb/hr 22.3 lb/hr x 8,760 hr/yr x ton/ 2,000 lb = 97.8 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-2			

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

Page [1] of [5]

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 22.3 lb/hour 97.8 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 15.1 lb/hour 66.3 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.02 lb/MMBtu Reference: Vendor data		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.02 lb/MMBtu x 757 MMBtu/hr = 15.1 lb/hr 15.1 lb/hr x 8,760 hr/yr x ton/ 2,000 lb = 66.3 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-2			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 15.1 lb/hour 66.3 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM/PM10		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 7.6 lb/hour 33.2 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.01 lb/MMBtu Reference: Vendor data		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.01 lb/MMBtu x 757 MMBtu/hr = 7.6 lb/hr 7.6 lb/hr x 8,760 hr/yr x ton/ 2,000 lb = 33.2 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-2			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 7.6 lb/hour 33.2 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO2		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 12.1 lb/hour 53.1 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.016 lb/MMBtu Reference: Vendor data		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.016 lb/MMBtu x 757 MMBtu/hr = 12.1 lb/hr 12.1 lb/hr x 8,760 hr/yr x ton/ 2,000 lb = 53.1 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-2			

EMISSIONS UNIT INFORMATION

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Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 12.1 lb/hour 53.1 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Grate-type Suspension Boiler – 1A

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 2.3 lb/hour 9.9 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.003 lb/MMBtu Reference: Vendor data		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.003 lb/MMBtu x 757 MMBtu/hr = 2.3 lb/hr 2.3 lb/hr x 8,760 hr/yr x ton/ 2,000 lb = 9.9 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-2			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 2.3 lb/hour 9.9 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [1] of [5]
Grate-type Suspension Boiler – 1A

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual Method 9	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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Grate-type Suspension Boiler – 1A

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**Continuous Monitoring System:** Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [5]

Grate-type Suspension Boiler – 1A

I. EMISSIONS UNIT ADDITIONAL INFORMATION**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Not Applicable

**Section [1] of [5]
Grate-type Suspension Boiler – 1A**

Additional Requirements for Air Construction Permit Applications

- ### **Additional Requirements for Title V Air Operation Permit Applications**

- ### **Additional Requirements Comment**

[illegible]

EMISSIONS UNIT INFORMATION

**Section [2] of [5]
Emergency Generator**

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [2] of [5]

Emergency Generator**A. GENERAL EMISSIONS UNIT INFORMATION****Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

- ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

- ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Emergency Generator

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 49
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8. Federal Program Applicability: (Check all that apply)

- ☐ Acid Rain Unit
- ☐ CAIR Unit
- ☐ Hg Budget Unit

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

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Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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Emergency Generator

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:
2. Maximum Production Rate:
3. Maximum Heat Input Rate: 5 million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 500 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

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Emergency Generator

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: See Report		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:		6. Stack Height: 25 feet	
		7. Exit Diameter: 0.5 feet	
8. Exit Temperature: 942°F		9. Actual Volumetric Flow Rate: acfm	
		10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Table 3-8 presents emission point information.			

EMISSIONS UNIT INFORMATION

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D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment 1 of 1

1. Segment Description (Process/Fuel Type): Biodiesel		
2. Source Classification Code (SCC):		3. SCC Units: Gallons of fuel
4. Maximum Hourly Rate: 36.6	5. Maximum Annual Rate: 18,300	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

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Emergency Generator

E. EMISSIONS UNIT POLLUTANTS**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			EL
NOX			EL
PM/PM10			EL
SO2			EL
VOC			EL

EMISSIONS UNIT INFORMATION

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Emergency Generator

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3.8 lb/hour 0.96 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 2.6 g/hp-hr Reference: 40 CFR Part 60, Subpart IIII, 40 CFR 89.112		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 2.6 g/hp-hr x 671 hp x lb/453.6 g = 3.8 lb/hr 3.8 lb/hr x 500 hr/yr x ton/ 2,000 lb = 0.96 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-8.			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 4.0 lb/hour 0.99 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 2.68 g/hp-hr Reference: 40 CFR Part 60, Subpart IIII, 40 CFR 89.112, AP-42		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 2.68 g/hp-hr x 671 hp x lb/453.6 g = 4.0 lb/hr 4.0 lb/hr x 500 hr/yr x ton/ 2,000 lb = 0.99 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-8.			

EMISSIONS UNIT INFORMATION

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Emergency Generator

POLLUTANT DETAIL INFORMATION

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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM/PM10		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.2 lb/hour 0.06 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.15 g/hp-hr Reference: 40 CFR Part 60, Subpart IIII, 40 CFR 89.112, AP-42		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.15 g/hp-hr x 671 hp x lb/453.6 g = 0.2 lb/hr 0.2 lb/hr x 500 hr/yr x ton/ 2,000 lb = 0.06 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-8.			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS****(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO2		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 22.7 lb/hour 99.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.0015% S Reference:		7. Emissions Method Code: 2	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 7.1 lb/gal x 36.6 gal/hr x 0.0015 % x (64/32) = 0.01 lb/hr 0.01 lb/hr x 500 hr/yr x ton/ 2,000 lb = 0.0019 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-8.			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Emergency Generator

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS****(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.5 lb/hour 0.12 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 7.05E-04 lb/hp-hr Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 7.05E-04 lb/hp-hr x 671 hp = 0.5 lb/hr 0.5 lb/hr x 500 hr/yr x ton/ 2,000 lb = 0.12 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.0, Table 3-8.			

EMISSIONS UNIT INFORMATION

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POLLUTANT DETAIL INFORMATION

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**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Emergency Generator

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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Emergency Generator

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information...	
Manufacturer:	Serial Number:
Model Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information...	
Manufacturer:	Serial Number:
Model Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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Emergency Generator

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**Continuous Monitoring System:** Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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Emergency Generator

I. EMISSIONS UNIT ADDITIONAL INFORMATION**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input checked="" type="checkbox"/> Attached, Document ID: See Report <input type="checkbox"/> Not Applicable

**Section [2] of [5]
Emergency Generator**

Additional Requirements for Air Construction Permit Applications

- ### **Additional Requirements for Title V Air Operation Permit Applications**

- ### **Additional Requirements Comment**

[illegible]

EMISSIONS UNIT INFORMATION

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Cooling Tower

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

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Cooling Tower

A. GENERAL EMISSIONS UNIT INFORMATION**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
- ☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- ☒ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Mechanical Draft Cooling Towers

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
C			49

8. Federal Program Applicability: (Check all that apply)

- ☐ Acid Rain Unit
- ☐ CAIR Unit
- ☐ Hg Budget Unit

9. Package Unit:

Manufacturer: **TBD**Model Number: **TBD**10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:

See Report, Table 3-11.

EMISSIONS UNIT INFORMATION

Section [3] of [5]

Cooling Tower

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

Mist Eliminators

2. Control Device or Method Code: **014**

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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Cooling Tower

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 1,118 gpm
2. Maximum Production Rate:
3. Maximum Heat Input Rate: million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment: See Report, Table 3-11 for cooling tower performance and emissions data.

EMISSIONS UNIT INFORMATION

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Cooling Tower

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: See Report		2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Cooling Tower Cells			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:		6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: °F		9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: See Report, Section 3.0, Table 3-11.			

EMISSIONS UNIT INFORMATION

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Cooling Tower

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

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Cooling Tower

E. EMISSIONS UNIT POLLUTANTS**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	014		WP
PM10	014		WP

EMISSIONS UNIT INFORMATION

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Cooling Tower

POLLUTANT DETAIL INFORMATION

Page [1] of [2]

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS****(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.56 lb/hour 2.4 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: See Report, Table 3-11. Reference: Golder 2009		7. Emissions Method Code: 2	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Report, Table 3-11.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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Cooling Tower

POLLUTANT DETAIL INFORMATION

Page [1] of [2]

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: Percent of CW	4. Equivalent Allowable Emissions: 0.56 lb/hour 2.4 tons/year
5. Method of Compliance: Design drift rate from manufacturer.	
6. Allowable Emissions Comment (Description of Operating Method): CW = circulating water	

Allowable Emissions Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Cooling Tower

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM10		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.086 lb/hour 0.38 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: See Report, Table 3-11. Reference: Golder, 2009		7. Emissions Method Code: 2	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Report, Table 3-11.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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Cooling Tower

POLLUTANT DETAIL INFORMATION

Page [2] of [2]

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: Percent of CW	4. Equivalent Allowable Emissions: 0.086 lb/hour 0.38 tons/year
5. Method of Compliance: Design drift rate from manufacturer.	
6. Allowable Emissions Comment (Description of Operating Method): CW = circulating water	

Allowable Emissions Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Cooling Tower

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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Cooling Tower

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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Cooling Tower

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**Continuous Monitoring System:** Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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Cooling Tower

I. EMISSIONS UNIT ADDITIONAL INFORMATION**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable

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Cooling Tower

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)):
☐ Attached, Document ID: _____ ☒ Not Applicable
-
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.):
☐ Attached, Document ID: _____ ☒ Not Applicable
-
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only)
☐ Attached, Document ID: _____ ☒ Not Applicable

1. Identification of Applicable Requirements:	<input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring:	<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation:	<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading):	<input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

[illegible]

EMISSIONS UNIT INFORMATION

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Material Handling

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [4] of [5]

Material Handling

A. GENERAL EMISSIONS UNIT INFORMATION**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

- ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Material handling

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
C			49

8. Federal Program Applicability: (Check all that apply)

- ☐ Acid Rain Unit
- ☐ CAIR Unit
- ☐ Hg Budget Unit

9. Package Unit:

Manufacturer: **TBD**Model Number: **TBD**

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:

The material handling for feedstock is depicted in Figure 2-4, 2-5 and 2-6 of the Report. Emissions estimates are presented in Table 3-7 and Appendix B of the Report.

EMISSIONS UNIT INFORMATION

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Material Handling

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

Baghouse control systems.2. Control Device or Method Code: **018****Emissions Unit Control Equipment/Method:** Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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Material Handling

B. EMISSIONS UNIT CAPACITY INFORMATION**(Optional for unregulated emissions units.)****Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate: See Report, Section 3.2
2. Maximum Production Rate:
3. Maximum Heat Input Rate: million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

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Material Handling

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: See Report		2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:		6. Stack Height: feet	
		7. Exit Diameter: feet	
8. Exit Temperature: °F		9. Actual Volumetric Flow Rate: acfm	
		10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

EMISSIONS UNIT INFORMATION

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Material Handling

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

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Material Handling

E. EMISSIONS UNIT POLLUTANTS**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018		WP
PM10	018		WP

EMISSIONS UNIT INFORMATIONSection [4] of [5]
Material Handling**POLLUTANT DETAIL INFORMATION**

Page [1] of [2]

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 14.28 lb/hour 10.2 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code: 2	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Report, Table 3-7 and appendix B for material handling PM emission estimates.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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Material Handling

POLLUTANT DETAIL INFORMATION

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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATIONSection [4] of [5]
Material Handling**POLLUTANT DETAIL INFORMATION**

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM10		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3.03 lb/hour 2.79 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code: 2	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Report, Table 3-7 and appendix B for material handling PM₁₀ emission estimates.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATIONSection [4] of [5]
Material Handling**POLLUTANT DETAIL INFORMATION**

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**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Material Handling

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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Material Handling

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information...	
Manufacturer:	
Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information...	
Manufacturer:	
Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [4] of [5]

Material Handling

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**Continuous Monitoring System:** Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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Material Handling

I. EMISSIONS UNIT ADDITIONAL INFORMATION**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable

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Material Handling**

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)):
☒ Attached, Document ID: See Report ☐ Not Applicable
-
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.):
☐ Attached, Document ID: _____ ☒ Not Applicable
-
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only)
☐ Attached, Document ID: _____ ☒ Not Applicable

1. Identification of Applicable Requirements:
☐ Attached, Document ID: _____

2. Compliance Assurance Monitoring:
☐ Attached, Document ID: _____ ☐ Not Applicable

3. Alternative Methods of Operation:
☐ Attached, Document ID: _____ ☐ Not Applicable

4. Alternative Modes of Operation (Emissions Trading):
☐ Attached, Document ID: _____ ☐ Not Applicable

--

EMISSIONS UNIT INFORMATION

**Section [5] of [5]
Fire Pump**

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [5] of [5]
Fire Pump

A. GENERAL EMISSIONS UNIT INFORMATION**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

- ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

- ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Fire Water Pump

3. Emissions Unit Identification Number:

4. Emissions Unit
Status Code:

C

5. Commence
Construction
Date:

6. Initial Startup
Date:

7. Emissions Unit
Major Group
SIC Code:

49

8. Federal Program Applicability: (Check all that apply)

- ☐ Acid Rain Unit
- ☐ CAIR Unit
- ☐ Hg Budget Unit

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: **250 kW**

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

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Fire Pump

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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Fire Pump

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:
2. Maximum Production Rate:
3. Maximum Heat Input Rate: 2.7 million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 250 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

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Fire Pump

C. EMISSION POINT (STACK/VENT) INFORMATION**(Optional for unregulated emissions units.)****Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: See Report		2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:		6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm		10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Table 3-9 in Report presents performance and emission data information.			

EMISSIONS UNIT INFORMATION

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Fire Pump

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment 1 of 1

1. Segment Description (Process/Fuel Type): Diesel/ Biodiesel		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

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Fire Pump

E. EMISSIONS UNIT POLLUTANTS**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			NS
NOX			NS
PM/PM10			NS
SO2			NS
VOC			NS

EMISSIONS UNIT INFORMATION

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Fire Pump

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.9 lb/hour 0.24 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 2.6 g/hp-hr Reference: 40 CFR Part 60, Subpart IIII		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 2.6 g/hp-hr x 335 hp x lb/453.6 g = 1.9 lb/hr 1.9 lb/hr x 250 hr/yr x ton/ 2,000 lb = 0.24 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.3, Table 3-9.			

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Fire Pump**POLLUTANT DETAIL INFORMATION**

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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

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Fire Pump

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 2.0 lb/hour 0.24 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 2.68 g/hp-hr Reference: 40 CFR Part 60, Subpart IIII		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 2.68 g/hp-hr x 335 hp x lb/453.6 g = 2.0 lb/hr 2.0 lb/hr x 250 hr/yr x ton/ 2,000 lb = 0.24 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.3, Table 3-9.			

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Fire Pump**POLLUTANT DETAIL INFORMATION**

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**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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Fire Pump**POLLUTANT DETAIL INFORMATION**

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM/PM10		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.1 lb/hour 0.01 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.15 g/hp-hr Reference: 40 CFR Part 60, Subpart IIII		7. Emissions Method Code: 5	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.15 g/hp-hr x 335 hp x lb/453.6 g = 0.1 lb/hr 0.1 lb/hr x 250 hr/yr x ton/ 2,000 lb = 0.01 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.3, Table 3-9.			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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Fire Pump**POLLUTANT DETAIL INFORMATION**

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO2		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.0041 lb/hour 0.0005 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.0015% S Reference:		7. Emissions Method Code: 2	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: $7.1 \text{ lb/gal} \times 19.4 \text{ gal/hr} \times 0.0015 \% \times (64/32) = 0.0041 \text{ lb/hr}$ $0.0041 \text{ lb/hr} \times 250 \text{ hr/yr} \times \text{ton/2,000 lb} = 0.0005 \text{ TPY}$			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.3, Table 3-9.			

EMISSIONS UNIT INFORMATION

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Fire Pump

POLLUTANT DETAIL INFORMATION

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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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Fire Pump

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.2 lb/hour 0.03 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 7.05E-04 lb/hp-hr Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 7.05E-04 lb/hp-hr x 335 hp = 0.2 lb/hr 0.2 lb/hr x 250 hr/yr x ton/ 2,000 lb = 0.03 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: Report, Section 3.3, Table 3-9.			

EMISSIONS UNIT INFORMATION**Section [5] of [5]
Fire Pump****POLLUTANT DETAIL INFORMATION****Page [5] of [5]****F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
ALLOWABLE EMISSIONS****Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.****Allowable Emissions** Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ___ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [5] of [5]

Fire Pump

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [5] of [5]

Fire Pump

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [5] of [5]

Fire Pump

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**Continuous Monitoring System:** Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [5] of [5]
Fire Pump

I. EMISSIONS UNIT ADDITIONAL INFORMATION**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report</u> <input type="checkbox"/> Not Applicable

**Section [5] of [5]
Fire Pump**

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)):
☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.):
☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only)
☐ Attached, Document ID: _____ ☒ Not Applicable

1. Identification of Applicable Requirements:
☐ Attached, Document ID: _____

2. Compliance Assurance Monitoring:
☐ Attached, Document ID: _____ ☐ Not Applicable

3. Alternative Methods of Operation:
☐ Attached, Document ID: _____ ☐ Not Applicable

4. Alternative Modes of Operation (Emissions Trading):
☐ Attached, Document ID: _____ ☐ Not Applicable

ATTACHMENT FB-FI-C1
Acid rain Part Application (DEP Form No. 62-210.900(1)(a))

Acid Rain Part Application

For more information, see instructions and refer to 40 CFR 72.30, 72.31, and 74; and Chapter 62-214, F.A.C.

This submission is: ☒ New ☐ Revised ☐ Renewal

STEP 1

Identify the source by plant name, state, and ORIS or plant code.

Plant name FBenergy Manatee Facility, LLC	State FL	TBD ORIS/Plant Code
--	-----------------	-------------------------------

STEP 2

Enter the unit ID# for every Acid Rain unit at the Acid Rain source in column "a."

If unit a SO₂ Opt-in unit, enter "yes" in column "b".

For new units or SO₂ Opt-in units, enter the requested information in columns "d" and "e."

a	b	c	d	e
Unit ID#	SO ₂ Opt-in Unit? (Yes or No)	Unit will hold allowances in accordance with 40 CFR 72.9(c)(1)	New or SO ₂ Opt-in Units Commence Operation Date	New or SO ₂ Opt-in Units Monitor Certification Deadline
001	N	Yes	4/2012	10/2012
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		
		Yes		

FBenergy Manatee Facility, LLC

Plant Name (from STEP 1)

STEP 3

Read the standard requirements.

Acid Rain Part Requirements.

- (1) The designated representative of each Acid Rain source and each Acid Rain unit at the source shall:
 - (i) Submit a complete Acid Rain Part application (including a compliance plan) under 40 CFR Part 72 and Rules 62-214.320 and 330, F.A.C., in accordance with the deadlines specified in Rule 62-214.320, F.A.C.; and
 - (ii) Submit in a timely manner any supplemental information that the DEP determines is necessary in order to review an Acid Rain Part application and issue or deny an Acid Rain Part;
- (2) The owners and operators of each Acid Rain source and each Acid Rain unit at the source shall:
 - (i) Operate the unit in compliance with a complete Acid Rain Part application or a superseding Acid Rain Part issued by the DEP; and
 - (ii) Have an Acid Rain Part.

Monitoring Requirements.

- (1) The owners and operators and, to the extent applicable, designated representative of each Acid Rain source and each Acid Rain unit at the source shall comply with the monitoring requirements as provided in 40 CFR Part 75, and Rule 62-214.420, F.A.C.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR Part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR Part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.
- (4) For applications including a SO₂ Opt-in unit, a monitoring plan for each SO₂ Opt-in unit must be submitted with this application pursuant to 40 CFR 74.14(a). For renewal applications for SO₂ Opt-in units include an updated monitoring plan if applicable under 40 CFR 75.53(b).

Sulfur Dioxide Requirements.

- (1) The owners and operators of each source and each Acid Rain unit at the source shall:
 - (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)), or in the compliance subaccount of another Acid Rain unit at the same source to the extent provided in 40 CFR 73.35(b)(3), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
 - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
- (3) An Acid Rain unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
 - (i) Starting January 1, 2000, an Acid Rain unit under 40 CFR 72.6(a)(2); or
 - (ii) Starting on the later of January 1, 2000, or the deadline for monitor certification under 40 CFR Part 75, an Acid Rain unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain Part application, the Acid Rain Part, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements. The owners and operators of the source and each Acid Rain unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements.

- (1) The designated representative of an Acid Rain unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77.
- (2) The owners and operators of an Acid Rain unit that has excess emissions in any calendar year shall:
 - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR Part 77; and
 - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR Part 77.

Recordkeeping and Reporting Requirements.

- (1) Unless otherwise provided, the owners and operators of the source and each Acid Rain unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the EPA or the DEP:
 - (i) The certificate of representation for the designated representative for the source and each Acid Rain unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with Rule 62-214.350, F.A.C.; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
 - (ii) All emissions monitoring information, in accordance with 40 CFR Part 75, provided that to the extent that 40 CFR Part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply;
 - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,

Plant Name (from STEP 1) **FBenergy Manatee Facility, LLC**

**STEP 3,
Continued.**

Recordkeeping and Reporting Requirements (cont)

(iv) Copies of all documents used to complete an Acid Rain Part application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

(2) The designated representative of an Acid Rain source and each Acid Rain unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR Part 72, Subpart I, and 40 CFR Part 75.

Liability.

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain Part application, an Acid Rain Part, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.

(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.

(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.

(4) Each Acid Rain source and each Acid Rain unit shall meet the requirements of the Acid Rain Program.

(5) Any provision of the Acid Rain Program that applies to an Acid Rain source (including a provision applicable to the designated representative of an Acid Rain source) shall also apply to the owners and operators of such source and of the Acid Rain units at the source.

(6) Any provision of the Acid Rain Program that applies to an Acid Rain unit (including a provision applicable to the designated representative of an Acid Rain unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans) and 40 CFR 76.11 (NO_x averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR Part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one Acid Rain unit shall not be liable for any violation by any other Acid Rain unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.

(7) Each violation of a provision of 40 CFR Parts 72, 73, 74, 75, 76, 77, and 78 by an Acid Rain source or Acid Rain unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities.

No provision of the Acid Rain Program, an Acid Rain Part application, an Acid Rain Part, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an Acid Rain source or Acid Rain unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;

(2) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;

(3) Requiring a change of any kind in any state law regulating electric utility rates and charges, affecting any state law regarding such state regulation, or limiting such state regulation, including any prudence review requirements under such state law;

(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,

(5) Interfering with or impairing any program for competitive bidding for power supply in a state in which such program is established.

STEP 4

For SO₂ Opt-in units only.

In column "f" enter the unit ID# for every SO₂ Opt-in unit identified in column "a" of STEP 2.

For column "g" describe the combustion unit and attach information and diagrams on the combustion unit's configuration.

In column "h" enter the hours.

f	g	h (not required for renewal application)
Unit ID#	Description of the combustion unit	Number of hours unit operated in the six months preceding initial application

Plant Name (from STEP 1) **FBenergy Manatee Facility, LLC**

STEP 5

For SO₂ Opt-in units only.
(Not required for SO₂ Opt-in renewal applications.)

In column "i" enter the unit ID# for every SO₂ Opt-in unit identified in column "a" (and in column "f").

For columns "j" through "n," enter the information required under 40 CFR 74.20-74.25 and attach all supporting documentation required by 40 CFR 74.20-74.25.

i	j	k	l	m	n
Unit ID#	Baseline or Alternative Baseline under 40 CFR 74.20 (mmBtu)	Actual SO ₂ Emissions Rate under 40 CFR 74.22 (lbs/mmBtu)	Allowable 1985 SO ₂ Emissions Rate under 40 CFR 74.23 (lbs/mmBtu)	Current Allowable SO ₂ Emissions Rate under 40 CFR 74.24 (lbs/mmBtu)	Current Promulgated SO ₂ Emissions Rate under 40 CFR 74.25 (lbs/mmBtu)

STEP 6

For SO₂ Opt-in units only.

Attach additional requirements, certify and sign.

- A. If the combustion source seeks to qualify for a transfer of allowances from the replacement of thermal energy, a thermal energy plan as provided in 40 CFR 74.47 for combustion sources must be attached.
- B. A statement whether the combustion unit was previously an affected unit under 40 CFR 74.
- C. A statement that the combustion unit is not an affected unit under 40 CFR 72.6 and does not have an exemption under 40 CFR 72.7, 72.8, or 72.14.
- D. Attach a complete compliance plan for SO₂ under 40 CFR 72.40.
- E. The designated representative of the combustion unit shall submit a monitoring plan in accordance with 40 CFR 74.61. For renewal application, submit an updated monitoring plan if applicable under 40 CFR 75.53(b).
- F. The following statement must be signed by the designated representative or alternate designated representative of the combustion source: "I certify that the data submitted under 40 CFR Part 74, Subpart C, reflects actual operations of the combustion source and has not been adjusted in any way."

STEP 7

Read the certification statement; provide name, title, owner company name, phone, and e-mail address; sign, and date.

Signature		Date	
Certification (for designated representative or alternate designated representative only)			
I am authorized to make this submission on behalf of the owners and operators of the Acid Rain source or Acid Rain units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.			
Name Rick Jensen		Title President	
Owner Company Name FBenergy Manatee Facility, LLC NWFREC, LLC			
Phone (941) 567-1631		E-mail address riensen@fbenergy.com	
Signature <i>Richard Jensen</i>		Date <i>10/7/09</i>	

Acid Rain Program

Instructions for

Acid Rain Part Application

(40 CFR 72.30 - 72.31, and 74; and Rule 62-214.320, F.A.C.)

The Acid Rain Program requires the designated representative to submit an Acid Rain Part application for each source with an Acid Rain unit. A complete Certificate of Representation must be received by EPA before the Acid Rain Part application is submitted to the DEP Bureau of Air Regulation. A complete Acid Rain Part application, once submitted, is binding on the owners and operators of the Acid Rain source and is enforceable in the absence of an Acid Rain Part until the DEP Bureau of Air Regulation either issues an Acid Rain Part to the source or disapproves the application.

DEFINITIONS

"Act" – The federal Clean Air Act:

"CFR" - Code of Federal Regulations

"DOE" – U.S. Department of Energy

"EIA" – U.S. Energy Information Agency

"F.A.C." - Florida Administrative Code

"DEP" - Florida Department of Environmental Protection

"lbs" - pounds

"mmBtu" – million British thermal units

"NO_x" – Nitrogen oxides

"SO₂ Opt-in unit" - A combustion unit that has elected to become an affected unit under the Acid Rain Program.

For the purposes of applying 40 CFR Parts 72, 73, 75, 77, and 78, and

Chapter 62-214, F.A.C., each SO₂ Opt-in unit shall be treated as an Acid Rain unit.

"ORIS" - Office of Regulatory Information Systems

Please type or print. The alternate designated representative may sign in lieu of the designated representative. If assistance is needed, contact the DEP Bureau of Air Regulation at (850) 488-0114.

- STEP 1** Use the plant name and ORIS Code listed on the Certificate of Representation for the plant. An ORIS code is a 4-digit number assigned by the EIA at the DOE to power plants owned by utilities. If the plant is not owned by a utility but has a 5-digit plant code (also assigned by EIA), use the plant code. If no code has been assigned or if there is uncertainty regarding what the code number is, contact EIA at (202) 586-2402.
- STEP 2** For column "a," identify each Acid Rain unit at the Acid Rain source by providing the appropriate unit identification numbers, consistent with the unit identification numbers entered on the Certificate of Representation and with unit identification numbers used in reporting to the DOE and/or EIA. For new units without identification numbers, owners and operators may assign such numbers consistent with EIA and DOE requirements. If the unit is a SO₂ Opt-in unit, or electing to become one, enter "yes" in column "b." For columns "d" and "e," enter the commence operation date(s) and monitor certification deadline(s) for new units in accordance with 40 CFR 72.2 and 75.4, respectively.
- STEP 3** Read the standard requirements.
- STEP 4** For SO₂ Opt-in units only. In column "f" enter the unit ID# for every SO₂ Opt-in unit identified in column "a" of STEP 2. For column "g" describe the combustion unit and attach information and diagrams on the combustion unit's configuration. If not a renewal application, in column "h" enter the number of hours each unit operated in the six months preceding initial application and attach supporting documentation.
- STEP 5** For SO₂ Opt-in units only. (Not required for renewal applications.) In column "i" enter the unit ID# for every SO₂ Opt-in unit identified in column "a" (and in column "f"). For columns "j" through "n," enter the information required under 40 CFR 74.20-74.25 and attach all supporting documentation required by 40 CFR 74.20-74.25.

STEP 6 **For SO₂ Opt-in units only.** Complete the additional requirements A - F. The designated representative or alternate designated representative must read the certification statement, sign and date.
The Administrator shall be responsible for the following activities under the opt-in provisions of the Acid Rain Program:

- (1) *Calculating the baseline or alternative baseline and allowance allocation, and allocating allowances for combustion or process sources that become affected units under 40 CFR Part 74;*
- (2) *Certifying or recertifying monitoring systems for combustion or process sources as provided under 40 CFR 74.20;*
- (3) *Establishing allowance accounts, tracking allowances, assessing end-of-year compliance, determining reduced utilization, approving thermal energy transfer and accounting for the replacement of thermal energy, closing accounts for opt-in sources that shut down, are reconstructed, become affected under 40 CFR 72.6, or fail to renew their opt-in permit, and deducting allowances as provided under 40 CFR Part 74, Subpart E; and*
- (4) *Ensuring that the opt-in source meets all withdrawal conditions prior to withdrawal from the Acid Rain Program as provided under 40 CFR 74.18; and*
- (5) *Approving and disapproving the request to withdraw from the Acid Rain Program.*

The DEP shall be responsible for the following activities:

- (1) *Issuing the draft and final opt-in permit;*
- (2) *Revising and renewing the opt-in permit; and*
- (3) *Terminating the opt-in permit for an opt-in source as provided in 40 CFR 74.18 (withdrawal), 40 CFR 74.46 (shutdown, reconstruction or change in affected status) and 40 CFR 74.50 (deducting allowances).*

STEP 7 The designated representative or alternate designated representative must read the certification statement; provide name, title, owner company name, phone, and e-mail address; sign and date.

Submission Deadlines

For new units, an initial Acid Rain Part application must be submitted to the DEP Bureau of Air Regulation 24 months before the date the unit commences operation.

Acid Rain Part renewal applications must meet the same submission deadline as the Title V permit renewal application for the source.

The designated representative of any operating combustion unit that wishes the unit to become a SO₂ Opt-in unit may submit an Acid Rain Part application and a monitoring plan to the Administrator and DEP Bureau of Air Regulation at any time. Within 21 calendar days from the date the DEP Bureau of Air Regulation issues or denies a draft Title V permit revision incorporating the unit as an acid rain unit, the designated representative of the unit must submit to the Administrator and DEP Bureau of Air Regulation, in writing, a confirmation or rescission of the unit's intention to become a SO₂ Opt-in unit. The Administrator shall treat the failure to make a timely submission as a rescission of the unit's intention to become a SO₂ Opt-in unit and as a withdrawal of the application.

Submit this form and a copy to:

DEP Bureau of Air Regulation
MS 5505
2600 Blair Stone Rd
Tallahassee, FL 32399-2400

For SO₂ Opt-in units, also send this form or its equivalent to the Administrator at:

U.S. Environmental Protection Agency
Clean Air Markets Division (6204J)
1200 Pennsylvania Ave NW
Washington, DC 20460



Certificate of Representation

Page

For more information, see instructions and 40 CFR 72.24, 40 CFR 96.113, 96.213, or 96.313, or a comparable state regulation under the Clean Air Interstate Rule (CAIR) NO_x Annual, SO₂, and NO_x Ozone Season Trading Programs, or 40 CFR 97.113, 97.213, or 97.313, as applicable.

This submission is: ☒ New ☐ Revised (revised submissions must be complete; see instructions)

FACILITY (SOURCE) INFORMATION

STEP 1
Provide information for the facility (source).

Facility (Source) Name	FBenergy Manatee Facility, LLC	State	FL	Plant Code	TBD
County Name Manatee					
Latitude 27/37/14			Longitude 82/32/29		

STEP 2
Enter requested information for the designated representative.

Name	Rick Jensen	Title	President
Company Name Florida Biomass Energy, LLC			
Address 9040 Town Center Parkway, Bradenton, Florida 34202			
Phone Number (941) 567-1631		Fax Number	
E-mail address rijensen@fbenergy.com			

STEP 3
Enter requested information for the alternate designated representative.

Name	Title
Company Name	
Address	
Phone Number	Fax Number
E-mail address	

Facility (Source) Name (from Step 1) **FBenergy Manatee Facility, LLC**

UNIT INFORMATION

STEP 4: Complete one page for each unit located at the facility identified in STEP 1 (i.e., for each boiler, simple cycle combustion turbine, or combined cycle combustion turbine.) Do not list duct burners. Indicate each program to which the unit is subject, and enter all other unit-specific information, including the name of each owner and operator of the unit and the generator ID number and nameplate capacity of each generator served by the unit. If the unit is subject to a program, then the facility (source) is also subject. (For units subject to the NO_x Budget Trading Program, a separate "Account Certificate of Representation" form must be submitted to meet requirements under that program.)

Applicable Program(s): ☐ Acid Rain ☐ CAIR NO_x Annual ☐ CAIR SO₂ ☒ CAIR NO_x Ozone Season

Unit ID# 001	Unit Type: OB	Source Category Electric Utility	Generator ID Number	Acid Rain Capacity
		NAICS Code 22 -Utilities	Steam Turbine 001	60 (net)
Date unit began (or will begin) serving any generator producing electricity for sale (including test generation) (mm/dd/yyyy): 4/2012		Check One: Actual <input type="checkbox"/> Projected <input checked="" type="checkbox"/>		
Company Name: FBenergy Manatee Facility, LLC				<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator
Company Name:				<input type="checkbox"/> Owner <input type="checkbox"/> Operator
Company Name:				<input type="checkbox"/> Owner <input type="checkbox"/> Operator
Company Name:				<input type="checkbox"/> Owner <input type="checkbox"/> Operator
Company Name:				<input type="checkbox"/> Owner <input type="checkbox"/> Operator

Facility (Source) Name (from Step 1) **FBenergy Manatee Facility, LLC**

UNIT INFORMATION

STEP 4: Complete one page for each unit located at the facility identified in STEP 1 (i.e., for each boiler, simple cycle combustion turbine, or combined cycle combustion turbine.) Do not list duct burners. Indicate each program to which the unit is subject, and enter all other unit-specific information, including the name of each owner and operator of the unit and the generator ID number and nameplate capacity of each generator served by the unit. If the unit is subject to a program, then the facility (source) is also subject. (For units subject to the NO_x Budget Trading Program, a separate "Account Certificate of Representation" form must be submitted to meet requirements under that program.)

Applicable Program(s): ☐ Acid Rain ☐ CAIR NO_x Annual ☐ CAIR SO₂ ☐ CAIR NO_x Ozone Season

Unit ID#	Unit Type	Source Category	Generator ID Number	Acid Rain Capacity
		NAICS Code		
Date unit began (or will begin) serving any generator producing electricity for sale (including test generation) (mm/dd/yyyy):			Check One: Actual <input type="checkbox"/> Projected <input type="checkbox"/>	
Company Name: FBenergy Manatee Facility, LLC				Owner <input type="checkbox"/> Operator <input type="checkbox"/>
Company Name:				Owner <input type="checkbox"/> Operator <input type="checkbox"/>
Company Name:				Owner <input type="checkbox"/> Operator <input type="checkbox"/>
Company Name:				Owner <input type="checkbox"/> Operator <input type="checkbox"/>
Company Name:				Owner <input type="checkbox"/> Operator <input type="checkbox"/>

STEP 5: Read the certifications, sign and date.

Acid Rain Program

I certify that I was selected as the designated representative or alternate designated representative (as applicable) by an agreement binding on the owners and operators of the affected source and each affected unit at the source (i.e., the source and each unit subject to the Acid Rain Program, as indicated in Applicable Program(s) in Step 4).

I certify that I have all necessary authority to carry out my duties and responsibilities under the Acid Rain Program on behalf of the owners and operators of the affected source and each affected unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.

I certify that the owners and operators of the affected source and each affected unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, an affected unit, or where a utility or industrial customer purchases power from an affected unit under a life-of-the-unit, firm power contractual arrangement, I certify that:

I have given a written notice of my selection as the designated representative or alternate designated representative (as applicable) and of the agreement by which I was selected to each owner and operator of the affected source and each affected unit at the source; and

Allowances, and proceeds of transactions involving allowances, will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of allowances, allowances and proceeds of transactions involving allowances will be deemed to be held or distributed in accordance with the contract.

Clean Air Interstate Rule (CAIR) NO_x Annual Trading Program

I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative (as applicable), by an agreement binding on the owners and operators of the CAIR NO_x source and each CAIR NO_x unit at the source (i.e., the source and each unit subject to the CAIR NO_x Annual Trading Program, as indicated in Applicable Program(s) in Step 4).

I certify that I have all necessary authority to carry out my duties and responsibilities under the CAIR NO_x Annual Trading Program on behalf of the owners and operators of the CAIR NO_x source and each CAIR NO_x unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.

I certify that the owners and operators of the CAIR NO_x source and each CAIR NO_x unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR NO_x unit, or where a utility or industrial customer purchases power from a CAIR NO_x unit under a life-of-the-unit, firm power contractual arrangement, I certify that:

I have given a written notice of my selection as the CAIR designated representative or alternate CAIR designated representative (as applicable) and of the agreement by which I was selected to each owner and operator of the CAIR NO_x source and each CAIR NO_x unit at the source; and

CAIR NO_x allowances and proceeds of transactions involving CAIR NO_x allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO_x allowances by contract, CAIR NO_x allowances and proceeds of transactions involving CAIR NO_x allowances will be deemed to be held or distributed in accordance with the contract.

Clean Air Interstate Rule (CAIR) SO₂ Trading Program

I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative (as applicable), by an agreement binding on the owners and operators of the CAIR SO₂ source and each CAIR SO₂ unit at the source (i.e., the source and each unit subject to the SO₂ Trading Program, as indicated in ~~A~~Applicable Program(s)@ in Step 4).

I certify that I have all necessary authority to carry out my duties and responsibilities under the CAIR SO₂ Trading Program, on behalf of the owners and operators of the CAIR SO₂ source and each CAIR SO₂ unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.

I certify that the owners and operators of the CAIR SO₂ source and each CAIR SO₂ unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR SO₂ unit, or where a utility or industrial customer purchases power from a CAIR SO₂ unit under a life-of-the-unit, firm power contractual arrangement, I certify that:

I have given a written notice of my selection as the CAIR designated representative or alternate CAIR designated representative (as applicable) and of the agreement by which I was selected to each owner and operator of the CAIR SO₂ source and each CAIR SO₂ unit at the source; and

CAIR SO₂ allowances and proceeds of transactions involving CAIR SO₂ allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR SO₂ allowances by contract, CAIR SO₂ allowances and proceeds of transactions involving CAIR SO₂ allowances will be deemed to be held or distributed in accordance with the contract.

Clean Air Interstate Rule (CAIR) NO_x Ozone Season Trading Program

I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative (as applicable), by an agreement binding on the owners and operators of the CAIR NO_x Ozone Season source and each CAIR NO_x Ozone Season unit at the source (i.e., the source and each unit subject to the CAIR NO_x Ozone Season Trading Program, as indicated in ~~A~~Applicable Program(s)@ in Step 4).

I certify that I have all necessary authority to carry out my duties and responsibilities under the CAIR NO_x Ozone Season Trading Program on behalf of the owners and operators of the CAIR NO_x Ozone Season source and each CAIR NO_x Ozone Season unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.

I certify that the owners and operators of the CAIR NO_x Ozone Season source and each CAIR NO_x Ozone Season unit shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR NO_x Ozone Season unit, or where a utility or industrial customer purchases power from a CAIR NO_x Ozone Season unit under a life-of-the-unit, firm power contractual arrangement, I certify that:

I have given a written notice of my selection as the CAIR designated representative or alternate CAIR designated representative (as applicable) and of the agreement by which I was selected to each owner and operator of the CAIR NO_x Ozone Season source and each CAIR NO_x Ozone Season unit; and

CAIR NO_x Ozone Season allowances and proceeds of transactions involving CAIR NO_x Ozone Season allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO_x Ozone Season allowances by contract, CAIR NO_x Ozone Season allowances and proceeds of transactions involving CAIR NO_x Ozone Season allowances will be deemed to be held or distributed in accordance with the contract.

General

I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

<i>Richard Jensen</i> Signature (Designated Representative)	Date <i>10/7/09</i>
Signature (Alternate Designated Representative)	Date



Instructions for the Certificate of Representation

Note: The Certificate of Representation information can be submitted online through the **CAMD Business System (CBS)** at <https://cfint.rtpnc.epa.gov/camd/cbs/index.cfm>. You must have a user ID and password. If you need a user ID and password, or if you have questions about CBS, contact Laurel DeSantis at desantis.laurel@epa.gov or (202) 343-9191, or Alex Salpeter at salpeter.alex@epa.gov or (202) 343-9157.

Any reference in these instructions to the Designated Representative means the Acid Rain Designated Representative and/or CAIR Designated Representative, as applicable. Any reference to the Alternate Designated Representative means the Alternate Acid Rain Designated Representative and/or the Alternate CAIR Designated Representative, as applicable. As reflected in this form, the Acid Rain Designated Representative and the CAIR Designated Representative for a facility (source) must be the same individual, and the Alternate Acid Rain Designated Representative and the Alternate CAIR Designated Representative for a facility (source) must be the same individual, if such a facility (source) has units subject to both the Acid Rain and CAIR Trading Programs.

Please type or print. Submit one copy of page 2 for each unit subject to the Acid Rain or CAIR Trading Programs at the facility (source), and indicate the page order and total number of pages (e.g., 1 of 4, 2 of 4, etc.) in the boxes in the upper right hand corner of page 2. **A Certificate of Representation amending an earlier submission supersedes the earlier submission in its entirety and must therefore always be complete.** Submit one Certificate of Representation form with original signature(s). For assistance, contact Laurel DeSantis at desantis.laurel@epa.gov or (202) 343-9191.

STEP 1 (i) A Plant Code is a 4 or 5 digit number assigned by the Department of Energy=s (DOE) Energy Information Administration (EIA) to facilities that generate electricity. For older facilities, APlant Code@ is synonymous with AORISPL@ and AFacility@ codes. If the facility generates electricity but no Plant Code has been assigned, or if there is uncertainty regarding what the Plant Code is, contact EIA at (202) 287-1732 or (202) 287-1745. For facilities that do not produce electricity, use the facility identifier assigned by EPA (beginning with A88@). If the facility does not produce electricity and has not been assigned a facility identifier, contact Laurel DeSantis at desantis.laurel@epa.gov or (202) 343-9191.

(ii) Enter the latitude and longitude representing the location of the units in the following format:

DDMMSS	Latitude
DDMMSS	Longitude

Where **DD** represents degrees of latitude (a two-digit decimal number ranging from 00 through 90), **DDD** represents degrees of longitude (a three-digit decimal number ranging from 000 through 180), **MM** represents minutes of latitude or longitude (a two-digit decimal number ranging from 00 through 60), and **SS** represents seconds of latitude or longitude (a two-digit whole number ranging from 00 through 60).

STEPS 2 & 3 The Designated Representative and the Alternate Designated Representative must be individuals (i.e., natural persons) and cannot be a company. Enter the company name and address of the representative as it should appear on all correspondence. If an email address is provided, most correspondence will be emailed. **Although not required, EPA strongly encourages owners and operators to designate an Alternate Designated Representative to act on behalf of the Designated Representative.**

STEP 4 (i) Complete one page for each unit subject to the Acid Rain or CAIR Trading Programs, and indicate the program(s) to which the unit is subject. (For units subject to the NO_x Budget Trading Program, a separate "Account Certificate of Representation" form must be submitted to meet requirements under that program.) Identify each unit at the facility by providing the appropriate unit identification number, consistent with the identifiers used in previously submitted Certificates of Representation (if applicable) and with submissions made to DOE and/or EIA. Do not list duct burners. For new units without identification numbers, owners and operators must assign identifiers consistent with EIA and DOE requirements. Each submission to EPA that includes the unit identification number(s) (e.g., monitoring plans and quarterly reports) should reference those unit identification numbers in exactly the same way that they are referenced on the Certificate of Representation. Do not identify units that are not subject to the above-listed programs but are part of a common monitoring configuration with a unit that is subject to any of these programs. To identify units in a common monitoring configuration that are not subject to any of these programs, call the CAMD Hotline at (202) 343-9620, and leave a message under the ACEMS@ submenu.

(ii) Identify the type of unit using one of the following abbreviations:

<u>Boilers</u>	<u>Boilers</u>	<u>Turbines</u>
AF Arch-fired boiler	OB Other boiler	CC Combined cycle
BFB Bubbling fluidized bed boiler	PFB Pressurized fluidized bed boiler	CT Combustion turbine
C Cyclone boiler	S Stoker	OT Other turbine
CB Cell burner boiler	T Tangentially-fired boiler	<u>Others</u>
CFB Circulating fluidized bed boiler	WBF Wet bottom wall-fired boiler	ICE Internal combustion engine
DB Dry bottom wall-fired boiler	WBT Wet bottom turbo-fired boiler	KLN Cement kiln
DTF Dry bottom turbo-fired boiler	WVF Wet bottom vertically-fired boiler	PRH Refinery process heater
DVF Dry bottom vertically-fired boiler		

If there is uncertainty about how a unit should be characterized, contact Robert Miller at miller.robertl@epa.gov or (202) 343-9077.

(iii) Indicate the source category description that most accurately describes the purpose for which the unit is operated by entering one of the following terms. If none of these descriptions applies to your unit, contact Robert Miller at miller.robertl@epa.gov or (202) 343-9077.

Automotive Stampings
Bulk Industrial Chemical
Cement Manufacturing
Cogeneration
Electric Utility

Industrial Boiler
Industrial Turbine
Institutional
Iron and Steel
Municipal Waste Combustor

Petroleum Refinery
Portland Cement Plant
Pulp and Paper Mill
Small Power Producer
Theme Park

(iv) Provide the primary North American Industrial Classification System (NAICS) code that most accurately describes the business type for which the unit is operated. If unknown, go to <http://www.census.gov> for guidance on how to determine the proper NAICS code for the unit.

(v) Enter the date the unit began (or will begin) serving any generator producing electricity for sale, including test generation. Enter this date and check the ☐ **Actual** box for any unit that has begun to serve a generator producing electricity for sale as of the date of submission of this form. (This information should be provided even if the unit does not currently serve a generator producing electricity for sale.) For any unit that will, but has not begun, as of the date of submission of this form, to serve a generator producing electricity for sale, estimate the future date on which the unit will begin to produce electricity for sale and check the ☐ **Projected** box. When the actual date is established, revise the form accordingly by entering the actual date and checking the ☐ **Actual** box. Enter "NA" if the unit has not ever served, is not currently serving, and is not projected to serve, a generator that producing electricity for sale. **You are strongly encouraged to use the CAMD Business System to update information regarding when a unit begins serving a generator producing electricity for sale.**

If you have questions regarding this portion of the form, contact Robert Miller at miller.robertl@epa.gov or (202) 343-9077.

(vi) For a unit subject to the Acid Rain Program or a CAIR unit that, as of the date of submission of this form, serves one or more generators (whether or not the generator produces electricity for sale), indicate the generator ID number and the nameplate capacity (in MWe) of each generator served by the unit. A unit serves a generator if it produces, or is able to produce, steam, gas, or other heated medium for generating electricity at that generator. For combined cycle units, report separately the nameplate capacities of the generators associated with the combustion turbine and the steam turbine. Please ensure that the generator ID numbers entered are consistent with those reported to the EIA.

The definitions of ☐ **nameplate capacity** under the Acid Rain Program and the CAIR Programs differ slightly. Therefore, for a unit subject to the Acid Rain Program and any CAIR Program, the nameplate capacity for the same generator under the Acid Rain Program and under the CAIR Program may differ in certain limited circumstances. Specifically, for a unit subject to the Acid Rain Program, the nameplate capacity of a generator, if listed in the National Allowance Database ("NADB"), is not affected by physical changes to the generator after initial installation that result in an increase in the maximum electrical generating output that the generator is capable of producing. Otherwise, for a unit subject to the Acid Rain Program or a CAIR Program, the nameplate capacity of a generator is affected by physical changes to the generator after initial installation that result in an increase in the maximum electrical generating output that the generator is capable of producing. In such a case, the higher maximum electrical generating output number in MWe should be reported in the nameplate capacity column. Enter ☐ **NA** if, as of the date of submission of this form, the unit does not serve a generator.

See the definition of Anameplate capacity@ at 40 CFR 72.2, 96.102, 97.102, 96.202, 97.202, 96.302, and 97.302, as applicable. The NADB is located at the CAMD website at <http://www.epa.gov/airmarkets/allocations/index.html>. If you have questions regarding nameplate capacity, contact Robert Miller at miller.robertl@epa.gov or (202) 343-9077; if you have questions regarding the NADB, contact Craig Hillock at hillock.craig@epa.gov or (202) 343-9105.

(vii) Enter the company name of each owner and operator in the ACompany Name@ field. Indicate whether the company is the owner, operator, or both. For new units, if the operator of a unit has not yet been chosen, indicate that the owner is both the owner and operator and submit a revised form when the operator has been selected within 30 days of the effective date of the selection. EPA must be notified of changes to owners and operators within 30 days of the effective date of the change. **You are strongly encouraged to use the CAMD Business System to provide updated information on owners and operators.**

Mail this form to:

For regular/certified mail:

U.S. Environmental Protection Agency
Clean Air Markets Division (6204J)
Attention: Designated Representative
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For overnight mail:

U.S. Environmental Protection Agency
Clean Air Markets Division (6204J)
Attention: Designated Representative
1310 L Street, NW
Second Floor
Washington, DC 20005
(202) 343-9191

Submit this form prior to making any other submissions under the Acid Rain Program, CAIR NO_x Trading Program, CAIR SO₂ Trading Program, or CAIR NO_x Ozone Season Trading Program. Submit a revised Certificate of Representation when any information in the existing Certificate of Representation changes. **You are strongly encouraged to use the CAMD Business System to provide updated information.**

Paperwork Burden Estimate

The public reporting and record keeping burden for this collection of information is estimated to average 15 hours per response annually. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW., Washington, D.C. 20460. Include the OMB control number in any correspondence. **Do not send the completed form to this address.**

APPENDIX A
VENDOR DATA

Hog Fuel from Database

Component	Avg	Std. Dev.	Min.	Max.
Carbon	32.19%	4.42%	22.52%	37.10%
Hydrogen	3.97%	0.81%	2.46%	5.43%
Oxygen	25.37%	2.71%	19.29%	26.90%
Nitrogen	0.20%	0.14%	0.04%	0.47%
Sulfur	0.02%	0.01%	0.01%	0.04%
Chlorine	0.02%	0.01%	0.00%	0.04%
Ash	1.01%	0.64%	0.44%	2.61%
Moisture	37.23%	8.69%	21.34%	54.94%
HHV, Btu/lb	5,301	1,034	3,693	6,567

Forest Slash from Database

Component	Avg	Std. Dev.	Min.	Max.
Carbon	28.60%	2.84%	23.65%	29.34%
Hydrogen	3.61%	0.35%	3.00%	3.69%
Oxygen	22.11%	1.92%	18.56%	22.40%
Nitrogen	0.31%	0.11%	0.17%	0.40%
Sulfur	0.02%	0.01%	0.01%	0.03%
Chlorine	0.01%	0.00%	0.00%	0.01%
Ash	1.00%	1.28%	0.35%	5.30%
Moisture	44.33%	9.91%	17.00%	53.80%
HHV, Btu/lb	4,879	948	3,842	6,850

MFG Waste from Database

Component	Avg	Std. Dev.	Min.	Max.
Carbon	45.83%	1.95%	42.91%	47.66%
Hydrogen	5.77%	0.49%	5.03%	6.33%
Oxygen	37.27%	0.82%	36.38%	38.50%
Nitrogen	0.19%	0.08%	0.08%	0.30%
Sulfur	0.03%	0.01%	0.02%	0.04%
Chlorine	0.01%	0.00%	0.01%	0.02%
Ash	1.08%	0.65%	0.48%	2.06%
Moisture	9.82%	2.44%	7.23%	13.49%
HHV, Btu/lb	7,409	42	7,517	7,600

APPENDIX B
MATERIAL HANDLING EMISSION ESTIMATES

TABLE B-1A
MATERIAL HANDLING EMISSION ESTIMATES
TRUCK TRAFFIC ON PAVED ROADS
Project: FB Energy

Parameters		TRUCK TRAFFIC Delivery of wood	TRUCK TRAFFIC Delivery of Sorbent	TRUCK TRAFFIC Shipping of Ash	FRONTEND LOADER Reclaim from Emergency Pile
Emission Point/Area	Flow Diagram ID	S1	B1	A3	E2
Operational Data					
Activity, hours days	Daily	12	12	12	24
	Annual	312	312	312	14 (2-weeks)
Material Handling Data					
Material type		Wood Chips	Sorbent	Ash	Wood Chips
Material throughput, ton/hr ^a		187	0.125	1	68
	ton/day	2,244	3	19	1,624
	ton/yr	700,128	1,095	7,113	22,734
Truck Capacity (tons)	Capacity	25	25	25	6.3
Vehicle weight (W) (tons)	Unloaded	12.5	12.5	12.5	147.4
	Loaded	37.5	37.5	37.5	153.7
	Average	25	25	25	150.6
Number of truck trips	Daily Avg/ Annual Avg	89.76	0.12	0.8	256
Number of miles/per truck round trip	Daily Avg/ Annual Avg	0.00	0.33	0.33	0.15
Total road transport (miles/day)	Daily Avg	71	0.040	0.258	38.8
Total road transport (miles/yr)	Annual Avg	22,100	14	94	543
General/ Site Characteristics					
Particle size multiplier, PM (k)		0.082	0.082	0.082	0.082
Particle size multiplier, PM10 (k)		0.016	0.016	0.016	0.016
Particle size multiplier, PM2.5 (k)		0.0024	0.0024	0.0024	0.0024
Days of precipitation greater than or equal to 0.01 inch (P)	Short term	0	0	0	0
	Annual	104	104	104	104
Silt loading (sL) (g/m ²) ^b		1	1	1	1
Emission Factor Fleet Exhaust (C), lb/VMT		0.00047	0.00047	0.00047	0.00047
Emission Control Data					
Emission control method		Watering	Watering	Watering	Watering
Emission control removal efficiency, %		60	60	60	60
Emission Factor (E) Equation for Paved Roads					
Uncontrolled EF (UEF) Equation	$UEF (lb/mile) = [k \times (sL/2)^{0.45} \times (W/3)^{1.5} - C] (1 - 1.2P/N), \text{ hourly basis}$ <p>where N = 8760</p>				
Controlled EF (CEF) Equation	$CEF (lb/mile) = UEF (lb/mile) \times [100\% - \text{Removal efficiency} (\%)]$				
Calculated PM Emission Factor (EF)					
Uncontrolled EF, lb/mile	Short term	1.257	1.257	1.257	18.581
	Annual	1.239	1.239	1.239	18.316
Controlled EF, lb/mile	Short term	0.503	0.503	0.503	7.432
	Annual	0.495	0.495	0.495	7.327
Calculated PM10 Emission Factor (EF)					
Uncontrolled EF, lb/mile	Short term	0.245	0.245	0.245	3.625
	Annual	0.241	0.241	0.241	3.574
Controlled EF, lb/mile	Short term	0.098	0.098	0.098	1.450
	Annual	0.097	0.097	0.097	1.429
Calculated PM2.5 Emission Factor (EF)					
Uncontrolled EF, lb/mile	Short term	0.036	0.036	0.036	0.543
	Annual	0.036	0.036	0.036	0.536
Controlled EF, lb/mile	Short term	0.015	0.015	0.015	0.217
	Annual	0.014	0.014	0.014	0.214
Estimated Emission Rate (CER)					
PM ER lb/hr (daily basis)		1.484	0.0008	0.005	12.009
	TPY	5.475	0.004	0.023	1.989
PM10 ER lb/hr (daily basis)		0.289	0.00016	0.001	2.343
	TPY	1.067	0.0007	0.005	0.388
PM2.5 ER lb/hr (daily basis)		0.043	0.00002	0.000	0.351
	TPY	0.158	0.00010	0.0007	0.058

Source: USEPA, 2006; AP-42, Section 13.2.1.3 for Paved Roads. Factor Documentation for AP-42, Section 13.2.1 Paved Roads.

^a Wood chips throughput based on Boiler heat input of 757 MMBtu/hr and heating content of 5,594 Btu/lb.

^b Based on Golder 2001 Port Transportation Study

TABLE B-1B
MATERIAL HANDLING EMISSION ESTIMATES (STACK-OUT)
TRANSFER OPERATIONS
Project: FB Energy

Parameters		TRUCK DUMP TO HOPPER	HOPPER TO COLLECTING CONVEYOR	COLLECTING CONVEYOR TO SCREEN	SCREEN TO CONVEYOR	SCREEN TO HOG MILL	HOG MILL TO CONVEYOR	CONVEYOR TO STACKER	STACKER TO PILE	TOTAL TRANSFER OPERATIONS EMISSIONS
Emission Point/Area	Flow Diagram ID	S2	S3	S4	S5	S6	S7	S8	S9	
Operational Data										
Activity, hours	Daily	12	12	12	12	12	12	12	12	
days	Annual	312	312	312	312	312	312	312	312	
Material Handling Data										
Material type		Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	
Material throughput, ton/hr ^a		187	187	187	125	62	62	187	187	
ton/day	Daily	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	
ton/yr	Annual	700,128	700,128	700,128	0	700,128	700,128	700,128	700,128	
Moisture content (M), % (nominal)		35	35	35	35	35	35	35	35	
Number of transfers		1	1	1	1	1	1	1	1	
General/ Site Characteristics										
Mean wind speed, mph	Daily	13.11	13.11	13.11	13.11	13.11	13.11	13.11	13.11	
	Annual	7.83	7.83	7.83	7.83	7.83	7.83	7.83	7.83	
Particle size multiplier, PM (k)		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	
Particle size multiplier, PM10 (k)		0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Particle size multiplier, PM2.5 (k)		0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	
Emission Control Data										
Emission control method		Enclosed Bottom Receiving Hopper	Low drop Point - Slow Moving Drag Chain	Screen/Hog Enclosure with Baghouse	Screen/Hog Enclosure with Baghouse	Screen/Hog Enclosure with Baghouse	Screen/Hog Enclosure with Baghouse	Low drop Point	Minimum drop height from automatic stacker	
Emission control removal efficiency, %		95	70	99	99	99	99	70	70	
Emission Factor (EF) Equations for Transfer Operations										
Uncontrolled EF (UEF) Equation		$UEF (lb/ton) = k \times (0.0032) \times (U/5)^{1.3} [(M/2)^{1.4}]$								
Controlled EF (CEF) Equation		$CEF (lb/ton) = UEF (lb/ton) \times [100\% - \text{Removal efficiency} (\%)]$								
Calculated PM Emission Factor (EF)										
Uncontrolled EF, lb/ton	Short term	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	
	Annual	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	
Controlled EF, lb/ton	Short term	0.000008	0.000045	0.000002	0.000002	0.000002	0.000002	0.000045	0.000045	
	Annual	0.000004	0.000023	0.000001	0.000001	0.000001	0.000001	0.000023	0.000023	
Calculated PM10 Emission Factor (EF)										
Uncontrolled EF, lb/ton	Short term	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	
	Annual	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	
Controlled EF, lb/ton	Short term	0.000004	0.000021	0.000001	0.000001	0.000001	0.000001	0.000021	0.000021	
	Annual	0.000002	0.000011	0.000000	0.000000	0.000000	0.000000	0.000011	0.000011	
Calculated PM2.5 Emission Factor (EF)										
Uncontrolled EF, lb/ton	Short term	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	
	Annual	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	
Controlled EF, lb/ton	Short term	0.0000005	0.0000032	0.0000001	0.0000001	0.0000001	0.0000001	0.0000032	0.0000032	
	Annual	0.0000003	0.0000017	0.0000001	0.0000001	0.0000001	0.0000001	0.0000017	0.0000017	
Estimated Emission Rate (CER)										
PM ER lb/hr (daily basis)		0.0014	0.0085	0.0003	0.0003	0.0003	0.0003	0.0085	0.0085	0.028
TPY		0.0014	0.0081	0.0003	0.0000	0.0003	0.0003	0.0081	0.0081	0.026
PM10 ER lb/hr (daily basis)		0.0007	0.0040	0.0001	0.0001	0.0001	0.0001	0.0040	0.0040	0.013
TPY		0.0006	0.0038	0.0001	0.0000	0.0000	0.000128	0.0038	0.0038	0.013
PM2.5 ER lb/hr (daily basis)		0.0001	0.0006	0.0000	0.0000	0.0000	0.000020	0.0006	0.0006	0.002
TPY		0.0001	0.0006	0.0000	0.0000	0.000019	0.000019	0.0006	0.0006	0.002
										TOTAL

Source: USEPA, 2006; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

^a Material throughput based on Boiler heat input of 757 MMBtu/hr and heating content of 5,594 Btu/lb.

TABLE B-1C
MATERIAL HANDLING EMISSION ESTIMATES
WIND EROSION
Project: FB Energy

Parameters		OPEN PILE Fuel Storage	OPEN PILE Emergency Pile
Emission Point/Area	Flow Diagram ID	S10	E1
Operational Data			
Activity, hours	Daily	24	24
days	Annual	365	14
Material Handling Data			
Material type		Wood Chips	Wood Chips
Moisture content (M), % (nominal)		35	35
Storage Pile Data			
Pile Description (shape)		Circular	Rectangular
Average Pile Height (ft)		20	
Pile Diameter (ft)		300	
Size, ft ²		70,650	17,500
Size, acres		1.6	0.4
General/ Site Characteristics			
Mean wind speed, mph	Daily	13.11	13.11
	Annual	7.83	7.83
Particle size multiplier, PM (k)		1	1
Particle size multiplier, PM10 (k)		0.5	0.5
Particle size multiplier, PM2.5 (k)		0.075	0.075
Days of precipitation greater than or equal to 0.01 inch (p)	Short term	0	0
	Annual	104	104
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Short term	75	75
	Annual	15.81	15.81
Silt content (s), %		0.25	0.25
Emission Control Data			
Emission control method		Water sprays	Water sprays
Emission control removal efficiency, %		60	60
Emission Factor (E) Equation for Wind Erosion			
Uncontrolled EF (UEF) Equation	$\text{UEF (lb/day/acre)} = k \times 1.7 \times (s/1.5) \times ((365 - p)/235) \times (f/15)$		
Controlled (Final) EF (CEF) Equation	$\text{CEF (lb/day/acre)} = \text{UEF (lb/day/acre)} \times (100 - \text{Removal efficiency} (\%))$		
Calculated PM Emission Factor (EF)			
Uncontrolled EF, lb/day/acre	Short term	2.20	2.20
	Annual	0.33	0.33
Controlled EF, lb/day/acre	Short term	0.88	0.88
	Annual	0.13	0.13
Calculated PM10 Emission Factor (EF)			
Uncontrolled EF, lb/day/acre	Short term	1.10	1.10
	Annual	0.17	0.17
Controlled EF, lb/day/acre	Short term	0.44	0.44
	Annual	0.07	0.07
Calculated PM2.5 Emission Factor (EF)			
Uncontrolled EF, lb/day/acre	Short term	0.17	0.17
	Annual	0.02	0.02
Controlled EF, lb/day/acre	Short term	0.07	0.07
	Annual	0.01	0.01
Estimated Emission Rate (CER)			
PM ER lb/hr (daily basis)		0.05956	0.01473
TPY		0.03932	0.00037
PM10 ER lb/hr (daily basis)		0.02978	0.00737
TPY		0.01966	0.00019
PM2.5 ER lb/hr (daily basis)		0.00447	0.00110
TPY		0.00295	0.00003

Source: USEPA, 1992. Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles. USEPA, 2006. Section 13.2.5 for k factors.

TABLE B-2A
MATERIAL HANDLING EMISSION ESTIMATES (RECLAIM)
TRANSFER OPERATIONS
Project: FB Energy

Parameters		Chain Drag to Reclaim Conveyor 1	Reclaim Conveyor 1 to Magnetic Separator/Screen	Magnetic Separator/Screen to Supply Conveyor 2	Conveyor 2 to Conveyor 3	Conveyor 3 to Day Bin	Day Bin to Boiler	TOTAL TRANSFER OPERATIONS EMISSIONS
Emission Point/Area	Flow Diagram ID	R1	R2	R3	R4	R5	R6	
Operational Data								
Activity, hours	Daily	24	24	24	24	24	24	
days	Annual	365	365	365	365	365	365	
Material Handling Data								
Material type		Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	
Material throughput, ton/hr ^a		68	68	68	68	68	68	
(ton/day)	Daily	1,624	1,624	1,624	1,624	1,624	1,624	
(ton/yr)	Annual	592,717	592,717	592,717	592,717	592,717	592,717	
Moisture content (M), % (nominal)		35	35	35	35	35	23	
Number of transfers		1	1	1	1	1	1	
General/ Site Characteristics								
Mean wind speed, mph	Daily	13.11	13.11	13.11	13.11	13.11	13.11	
	Annual	7.83	7.83	7.83	7.83	7.83	7.83	
Particle size multiplier, PM (k)		0.74	0.74	0.74	0.74	0.74	0.74	
Particle size multiplier, PM10 (k)		0.35	0.35	0.35	0.35	0.35	0.35	
Particle size multiplier, PM2.5 (k)		0.053	0.053	0.053	0.053	0.053	0.053	
Emission Control Data								
Emission control method		Low drop Point	Baghouse Controlled	Baghouse Controlled	Low drop Point	Baghouse Controlled	Enclosed	
Emission control removal efficiency, %		70	99	99	70	99	95	
Emission Factor (EF) Equations for Transfer Operations								
Uncontrolled EF (UEF) Equation	UEF (lb/ton) = k x (0.0032) x (U / 5) ^{1.3} / [(M / 2) ^{1.4}]							
Controlled EF (CEF) Equation	CEF (lb/ton) = UEF (lb/ton) x [100% - Removal efficiency (%)]							
Calculated PM Emission Factor (EF)								
Uncontrolled EF, lb/ton	Short term	0.000151	0.000151	0.000151	0.000151	0.000151	0.000271	
	Annual	0.000077	0.000077	0.000077	0.000077	0.000077	0.000139	
Controlled EF, lb/ton	Short term	0.000045	0.000002	0.000002	0.000045	0.000002	0.000014	
	Annual	0.000023	0.000001	0.000001	0.000023	0.000001	0.000007	
Calculated PM10 Emission Factor (EF)								
Uncontrolled EF, lb/ton	Short term	0.000071	0.000071	0.000071	0.000071	0.000071	0.000128	
	Annual	0.000036	0.000036	0.000036	0.000036	0.000036	0.000066	
Controlled EF, lb/ton	Short term	0.000021	0.000001	0.000001	0.000021	0.000001	0.000006	
	Annual	0.000011	0.000000	0.000000	0.000011	0.000000	0.000003	
Calculated PM2.5 Emission Factor (EF)								
Uncontrolled EF, lb/ton	Short term	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000194	
	Annual	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000099	
Controlled EF, lb/ton	Short term	0.0000032	0.0000001	0.0000001	0.0000032	0.0000001	0.0000010	
	Annual	0.0000017	0.0000001	0.0000001	0.0000017	0.0000001	0.0000005	
Estimated Emission Rate (CER)								
PM ER lb/hr (daily basis)		0.00306	0.00010	0.00010	0.00306	0.00010	0.00092	0.007
TPY		0.00686	0.00023	0.00023	0.00686	0.00023	0.00206	0.016
PM10 ER lb/hr (daily basis)		0.00145	0.00005	0.00005	0.00145	0.00005	0.00043	0.003
TPY		0.00324	0.00011	0.00011	0.00324	0.00011	0.00097	0.008
PM2.5 ER lb/hr (daily basis)		0.00022	0.00001	0.00001	0.00022	0.00001	0.00007	0.0005
TPY		0.00049	0.00002	0.00002	0.00049	0.00002	0.00015	0.0012
								TOTAL

Source: USEPA, 2006; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

^a Material throughput based on Boiler heat input of 757 MMBtu/hr and heating content of 5,594 Btu/lb.

TABLE B-2B
MATERIAL HANDLING EMISSION ESTIMATES (RECLAIM)- SHORT-TERM EMERGENCY OPERATIONS
TRANSFER OPERATIONS
Project: FB Energy

Parameters		Frontend Scoop in Emergency Pile	Frontend loader to Truck Dump Hopper	Hopper to Collecting Conveyor	Collecting Conveyor to Bypass Conveyor	Bypass Conveyor to Conveyor 1	Reclaim Conveyor 1 to Magnetic Separator/ Screen	Magnetic Separator/ Screen to Supply Conveyor 2	Conveyor 2 to Conveyor 3	Conveyor 3 to Day Bin	Day Bin to Boiler	TOTAL TRANSFER OPERATIONS EMISSIONS
Emission Point/Area	Flow Diagram ID	E2	E3	E4	E5	E6	R2	R3	R4	R5	R6	
Operational Data												
Activity, hours	Daily	24	24	24	24	24	24	24	24	24	24	
days	Annual (2-weeks)	14	14	14	14	14	14	14	14	14	14	
Material Handling Data												
Material type		Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	Wood Chips	
Material throughput, ton/hr*		68	68	68	68	68	68	68	68	68	68	
(ton/day)	Daily	1,624	1,624	1,624	1,624	1,624	1,624	1,624	1,624	1,624	1,624	
(ton/yr)	Annual (2-weeks)	22,734	22,734	22,734	22,734	22,734	22,734	22,734	22,734	22,734	22,734	
Moisture content (M), % (nominal)		35	35	35	35	35	35	35	35	35	23	
Number of transfers		1	1	1	1	1	1	1	1	1	1	
General/ Site Characteristics												
Mean wind speed, mph	Daily	13.11	13.11	13.11	13.11	13.11	13.11	13.11	13.11	13.11	13.11	
	Annual	7.83	7.83	7.83	7.83	7.83	7.83	7.83	7.83	7.83	7.83	
Particle size multiplier, PM (k)		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	
Particle size multiplier, PM10 (k)		0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Particle size multiplier, PM2.5 (k)		0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	
Emission Control Data												
Emission control method		Watering	Watering	Low drop Point	Low drop Point	Low drop Point	Baghouse Controlled	Baghouse Controlled	Low drop Point	Baghouse Controlled	Enclosed	
Emission control removal efficiency, %		60	60	70	70	70	99	99	70	99	95	
Emission Factor (EF) Equations for Transfer Operations												
Uncontrolled EF (UEF) Equation	$UEF (lb/ton) = k \times (0.0032) \times (U / 5)^{1.3} \times [(M / 2)^{1.4}]$											
Controlled EF (CEF) Equation	$CEF (lb/ton) = UEF (lb/ton) \times [100\% - \text{Removal efficiency} (\%)]$											
Calculated PM Emission Factor (EF)												
Uncontrolled EF, lb/ton	Short term	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	0.000151	0.000271	
	Annual	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	0.000077	0.000139	
Controlled EF, lb/ton	Short term	0.000060	0.000060	0.000045	0.000045	0.000045	0.000002	0.000002	0.000045	0.000002	0.000014	
	Annual	0.000031	0.000031	0.000023	0.000023	0.000023	0.000001	0.000001	0.000023	0.000001	0.000007	
Calculated PM10 Emission Factor (EF)												
Uncontrolled EF, lb/ton	Short term	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	0.000071	0.000128	
	Annual	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	0.000036	0.000066	
Controlled EF, lb/ton	Short term	0.000029	0.000029	0.000021	0.000021	0.000021	0.000001	0.000001	0.000021	0.000001	0.000006	
	Annual	0.000015	0.000015	0.000011	0.000011	0.000011	0.000000	0.000000	0.000011	0.000000	0.000003	
Calculated PM2.5 Emission Factor (EF)												
Uncontrolled EF, lb/ton	Short term	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000108	0.0000194	
	Annual	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000055	0.0000099	
Controlled EF, lb/ton	Short term	0.0000043	0.0000043	0.0000032	0.0000032	0.0000032	0.0000001	0.0000001	0.0000032	0.0000001	0.0000010	
	Annual	0.0000022	0.0000022	0.0000017	0.0000017	0.0000017	0.0000001	0.0000001	0.0000017	0.0000001	0.0000005	
Estimated Emission Rate (CER)												
PM ER lb/hr (daily basis)		0.00408	0.00408	0.00306	0.00306	0.00306	0.00010	0.00010	0.00306	0.00010	0.00092	0.022
TPY		0.00035	0.00035	0.00026	0.00026	0.00026	0.00001	0.00001	0.00026	0.00001	0.00008	0.002
PM10 ER lb/hr (daily basis)		0.00193	0.00193	0.00145	0.00145	0.00145	0.00005	0.00005	0.00145	0.00005	0.00043	0.010
TPY		0.00017	0.00017	0.00012	0.00012	0.00012	0.00000	0.00000	0.00012	0.00000	0.00004	0.001
PM2.5 ER lb/hr (daily basis)		0.00029	0.00029	0.00022	0.00022	0.00022	0.00001	0.00001	0.00022	0.00001	0.00007	0.0015
TPY		0.000025	0.000025	0.000019	0.000019	0.000019	0.000001	0.000001	0.000019	0.000001	0.000006	0.0001
												TOTAL

Source: USEPA, 2006; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

* Material throughput based on Boiler heat input of 757 MMBtu/hr and heating content of 5,594 Btu/lb.

TABLE B-3
SCREEN AND HOG MILL EMISSIONS
Project: FB Energy

Parameter		STACKOUT PRIMARY SCREEN	RECLAIM SECONDARY SCREEN	HOG MILL	TOTAL SCREEN AND HOG MILL
Operational Data					
Activity, hours	Daily	12	24	12	
days	Annual	312	365	312	
Material Handling Data					
Material type		Wood Chips	Wood Chips	Wood Chips	
Material throughput (ton/day)		2,244	1,624	2,244	
(ton/yr)		700,128	592,717	700,128	
Emission Control Data					
Emission control method		Enclosure with Baghouse Control	Enclosure with Baghouse Control	Enclosure with Baghouse Control	
Emission control removal efficiency, %		99	99	99	
PM Emission Factor (EF)					
Uncontrolled EF (UEF), lb/ton	Short term	0.025	0.025	0.02	
	Annual	0.025	0.025	0.02	
Controlled EF, lb/ton	Short term	0.00025	0.00025	0.0002	
	Annual	0.00025	0.00025	0.0002	
PM10 Emission Factor (EF)					
Uncontrolled EF, lb/ton	Short term	0.0087	0.0087	0.0095	
	Annual	0.0087	0.0087	0.0095	
Controlled EF, lb/ton	Short term	8.7E-05	8.7E-05	9.5E-05	
	Annual	8.7E-05	8.7E-05	9.5E-05	
PM2.5 Emission Factor (EF)					
Uncontrolled EF, lb/ton	Short term	0.0087	0.0087	0.0014	
	Annual	0.0087	0.0087	0.0014	
Controlled EF, lb/ton	Short term	8.7E-05	8.7E-05	0.000014	
	Annual	8.7E-05	8.7E-05	0.000014	
					TOTAL
Estimated Emission Rate (CER)					
PM ER lb/hr (daily basis)		0.0234	0.0169	0.0187	0.0590
TPY		0.088	0.074	0.070	0.2316
PM10 ER lb/hr (daily basis)		0.0081	0.0059	0.0089	0.0229
TPY		0.030	0.026	0.033	0.0895
PM2.5 ER lb/hr (daily basis)		0.0081	0.0059	0.0013	0.0153
TPY		0.030	0.026	0.005	0.0611

Source: Screen: USEPA, 2004; AP-42, Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing
Hog Mill: "Technical Guidance For Control of Industrial Process Fugitive Particulate Emissions", Table 2-43 Primary Crushing

TABLE B-4
MATERIALS STORAGE- SILOS EMISSIONS
Project: FB Energy

Parameter	Units	Ash Silo A1	Bicarbonate Silo B2	Total Silos
Operational Data (Silo Loading)				
Activity, hours	Daily	24	1	
hours	Annual	8760	43.8	
Air Flow	scfm	2,500	2,500	
Emission Control Data				
Emission control method		Fabric Filter	Fabric Filter	
PM/PM10 Emission Factor (EF)				
Controlled Emissions ^a	grain/scf	0.01	0.01	
PM2.5 Emission Factor (EF)				
Controlled Emissions ^b	grain/scf	0.0015	0.0015	
Estimated Emission Rate (CER)				
PM/PM10 ER (daily basis)	lb/hr	0.21	0.009	0.22
	TPY	0.94	0.005	0.94
PM2.5 ER (daily basis)	lb/hr	0.0324	0.0014	0.03
	TPY	0.142	0.001	0.14

^a Based on typical bin vent fabric filter controlled emission factor.

^b PM_{2.5} Emission Rate was based on the ratio of the particle size multipliers from EPA's batch drop equation.

Particle size multiplier, PM2.5(k)	0.053
Particle size multiplier, PM10(k)	0.35
Ratio PM2.5(k)/PM10(k)	0.15

TABLE B-5
ASH TRUCK LOADING
Project: FB Energy

Parameters		TRUCK LOADING
		Ash
Emission Point/Area	Flow Diagram ID	A2
Operational Data		
Activity, hours	Daily	24
days	Annual	8760
Material Handling Data		
Material type		Ash
Material throughput, ton/hr (design)		0.81
ton/day	Daily	19
ton/yr	Annual	7,113
Moisture content (M), % (estimated)		10
Number of transfers		1
General/ Site Characteristics		
Mean wind speed, mph	Daily	13.11
	Annual	7.83
Particle size multiplier, PM (k)		0.082
Particle size multiplier, PM10 (k)		0.016
Particle size multiplier, PM2.5 (k)		0.0024
Emission Control Data		
Emission control method		Low Drop
Emission control removal efficiency, %		70
Emission Factor (EF) Equations for Transfer Operations		
Uncontrolled EF (UEF) Equation	$UEF (lb/ton) = k \times (0.0032) \times (U / 5)^{1.3} / [(M / 2)^{1.4}]$	
Controlled EF (CEF) Equation	$CEF (lb/ton) = UEF (lb/ton) \times [100\% - \text{Removal efficiency} (\%)]$	
Calculated PM Emission Factor (EF)		
Uncontrolled EF, lb/ton	Short term	0.000097
	Annual	0.000049
Controlled EF, lb/ton	Short term	0.000029
	Annual	0.000015
Calculated PM10 Emission Factor (EF)		
Uncontrolled EF, lb/ton	Short term	0.000019
	Annual	0.000010
Controlled EF, lb/ton	Short term	0.000006
	Annual	0.000003
Calculated PM2.5 Emission Factor (EF)		
Uncontrolled EF, lb/ton	Short term	0.0000028
	Annual	0.0000014
Controlled EF, lb/ton	Short term	0.0000008
	Annual	0.0000004
Estimated Emission Rate (CER)		
PM ER lb/hr (daily basis)		2.4E-05
TPY		5.3E-05
PM10 ER lb/hr (daily basis)		4.6E-06
TPY		1.0E-05
PM2.5 ER lb/hr (daily basis)		6.9E-07
TPY		1.5E-06

Source: USEPA, 2006; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

TABLE B-6
PILE MAINTENANCE USING BULLDOZER/TRACTOR
Project: FB Energy

Reclaim for Rail	Data	Units/Comments
$E = k \times (s/12)^a \times (w/3)^b$; where $a = 0.7$ and $b = 0.45$, $k = 4.9$ for TSP	1.207	lb/VMT PM(TSP)
$s = 0.25$	1.00	miles per day
$w = 55$ tons	1.21	lb/day
	0.22	tons uncontrolled without rainfall
Emission control method	None	
Emission control removal efficiency, %	0	%
Accounting for rainfall using (365-P)/365 and Contol	0.16	tons controlled with rainfall
$E = k \times (s/12)^a \times (w/3)^b$; where $a = 0.9$ and $b = 0.45$, $k = 1.5$ for PM_{10}	0.370	lb/VMT PM_{10}
$s = 0.25$	1.00	miles per day
$w = 55$ tons	0.37	lb/day
	0.07	tons uncontrolled without rainfall
Emission control method	None	
Emission control removal efficiency, %	0	%
Accounting for rainfall using (365-P)/365 and Contol	0.05	tons controlled with rainfall
$E = k \times (s/12)^a \times (w/3)^b$; where $a = 0.9$ and $b = 0.45$, $k = 0.23$ for $PM_{2.5}$	0.057	lb/VMT $PM_{2.5}$
$s = 0.25$	1.00	miles per day
$w = 55$ tons	0.06	lb/day
	0.01	tons uncontrolled without rainfall
Emission control method	None	
Emission control removal efficiency, %	0	%
Accounting for rainfall using (365-P)/365 and Contol	0.01	tons controlled with rainfall

Source: USEPA, 2003; AP-42, Section 13.2.2 for Unpaved Roads. Industrial road factors used.
Source: Golder, 2009.