**DRAFT/PROPOSED**

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY**
**AIR QUALITY DIVISION**

**MEMORANDUM** **January 27, 2016**

**TO:** Phillip Fielder, P.E., Permits and Engineering Group Manager

**THROUGH:** Rick Groshong, Environmental Programs Manager

**THROUGH:** Phil Martin, P.E., Existing source Permits Section Manager

**THROUGH:** Peer Review

**FROM:** David Pollard, ROAT

**SUBJECT:** Evaluation of Permit Application No. **2010-278-C (M-3)**
Georgia-Pacific Consumer Products LP
Muskogee Mill
Facility ID No.: 643
4901 Chandler Road, Muskogee
Section 33 & W1/2 Section 34, T15N, R19EIM
Muskogee County, OK (Lat.35.73589; Long. -95.30489)
Directions: Muskogee Turnpike to Chandler Exit, East to 45th Street, South to Harold Abitz Drive, East into facility.

## SECTION I. INTRODUCTION

Georgia-Pacific Consumer Products LP (applicant or Georgia-Pacific) submitted an application for a construction permit, Permit No. 2010-278-C (M-3). Georgia-Pacific Consumer Products LP owns and operates a recycle deinking paper mill in Muskogee, Oklahoma ("GP" or "Mill") that is classified under the Standard Industrial Classification (SIC) code 2621 for Paper Mills and North American Industrial Classification System (NAICS) code 322121 for Paper (except Newsprint) Mills. The Mill manufactures pulp from various grades of wastepaper and market pulp and processes it through one of five paper machines to produce commercial and retail grades of tissue, toweling, and napkins. The facility is currently operating under Permit No. 2010-278-TVR (M-1) and is a major source of HAP (Hazardous Air Pollutants) and is PSD (Prevention of Significant Deterioration) major for criteria pollutants.

The most recent permits issued to Georgia-Pacific were Permit No. 99-113-C (M-12) issued on August 12, 2013 to install a new dust collection and control system on the winder section of Paper Machine #15 (PM-15), designated "Winder Section Dust Collection and Control System". The application for the Title V renewal permit was modified with an application to cover additional changes that were a minor modification resulting in the issuance of Permit No. 2010-278-TVR (M-1) on April 25, 2016

**Background and Scope of Modification**

GP is proposing to replace Boiler 2 (B-2) with a new natural gas fired boiler (Boiler 5, or B-5). B-2 has a maximum heat input rating of 440 million British thermal units per hour (MMBtu/hr) and a steam generating capacity of 300,000 pounds per hour (lb/hr). B-2 predominantly fires pulverized coal with small amounts of natural gas used as igniter fuel. B-2 generates steam that feeds a common header along with the other power boilers in operation at the mill. The common steam header provides steam to both process units and electric-generating steam turbines. The steam turbines use the steam to produce electricity for use on-site while extracting lower pressure steam for other facility process units. The natural gas boiler, B-5, will have a maximum heat input rating of 415 MMBtu/hr and will provide the same steam generating capacity of 300,000 lb/hr and will also feed the same common steam header to provide the same function as B-2. When B-5 is operating and shakedown period is complete, Boiler 2 (B-2) will be permanently removed from service.

In addition to the boiler replacement, the Muskogee Mill will also install dry sorbent injection (DSI) systems on Boilers 3 and 4 (B-3 and B-4) to provide a means for reducing mercury emissions generated from coal combustion. Although all information obtained to date indicates both B-3 and B-4 are fully compliant with the applicable mercury emission limit without controls, the DSI systems are intended to provide an additional margin of compliance with the mercury emission limit established by the National Emission Standards for Hazardous Air Pollutants (NESHAP) that apply to industrial boilers, commonly known as the Boiler Maximum Achievable Control Technology standards, or Boiler MACT. The DSI system will be operated when needed to obtain addition reduction of mercury emissions.

With this permit modification, several updates are made, one of which includes updated combustion emissions calculations, replacing some of the stack tests by standards and AP-42 factors, as well as elimination of certain equipment items that were either not installed or were removed. A comparison summary of the "Before and After" emissions factors is included in the PSD analysis. Finally, the correct PTE for B-2 $H_2SO_4$ 46.25 TPY, instead of 32.76 TPY. This is a carryover error from the memorandum of Permit No. 2010-278-TVR (M-1). G-P submitted an application on May 12, 2015 that included a request to change the emissions factor from 0.017 lbs/MMBtu to 0.024, due to an error in the 2003 stack test report, but it was overlooked in the memorandum and didn't get changed. Boiler B-1 $NO_X$ emission factor was corrected to reflect the BART 744 lbs/day (0.1 lb $NO_X$/MMBTU). None of these changes resulted in an increase (relaxation) of a permit limit.

The proposed project does not trigger Prevention of Significant Deterioration (PSD) permitting but will require a Tier II construction permit.

## SECTION II. PROCESS DESCRIPTION

The facility is a major manufacturer and converter of sanitary paper products, i.e., they make parent rolls and they also make finished products such as tissue, napkins, and paper towels. Many of these

products are printed with decorative inks during the converting process. Nominal capacity of the plant is 1,476 tons of air-dried finished paper per day.

The main processes involved in papermaking are pulping, de-inking (bleaching out the inks in the recycled paper), paper production, and printing. The company's basic raw material for wet papermaking is currently recycled wastepaper and purchased pulp, which is processed into pulp using a proprietary process. The facility typically recycles over a thousand tons of wastepaper per day. The applicant has indicated that future products may be made from other sources of fiber. Since this may result in different emissions from the materials or the use of different additives and also the applicability of additional regulations and/or MACT standards, the facility will evaluate these issues to determine the needs for submitting a permit application.

**Pulping and Pulp Processing**

Following is a description of the equipment used in the pulping process.

Pulpers - Use mechanical agitation and water to convert wastepaper to a pulp slurry.
Stock Blend Tank - Used to blend pulp.
Screens - Separate solid contaminants from the pulp slurry.
Washers - Separate solid contaminants from the pulp slurry.
Stock Presses - Used to dewater the pulp slurry and increase consistency.
Mixer - Used to mix the pulp slurry with process water, dilution water, chemicals, etc.
Flotation Cell Washers - Remove solid contaminants from the pulp slurry.
Cleaners - Remove solid particle contaminants.
Bleach Towers - Provide residence time to allow the bleach medium to react with the pulp slurry.
Thickeners - Used to increase pulp slurry consistency.
The pulping and pulp processing systems process and bleach wastepaper for use in the manufacture of tissue, towel, and napkin paper. This proprietary process uses bleaching agents on most grades of paper. Recycled wastepaper is re-pulped by physical and chemical processes into a pulp slurry to recover usable fiber, blended with various de-inking and bleaching compounds, and processed into paper stock to make the paper products. At the pulpers, recycled wastepaper is blended with hot water while mechanical agitation is used to convert the mixture into pulp slurry. Generally, the incoming slurry is screened to remove debris and impurities. Contaminants are removed in this step, as well. Additional contaminant removal is accomplished by means of processes performed by other equipment described above. Bleaching agents are added to the slurry for the purpose of increasing brightness. The facility uses no chlorine or chlorine dioxide to bleach pulp. The significance of this is that the facility is not subject to NESHAP S (40 CFR Part 63, Subpart S, National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry). Bleached pulp is stored in storage tanks for later use on paper machines to make paper. Volatile organic compounds and organic pollutants are released during pulp processing as a result of chemical and mechanical processes.

The Low Consistency Washers aerate the pulp slurry, which results in bubbles on top of the material. A rotating vacuum arm removes the bubbles from the top of the material and into a separator where liquids and vapors are separated. The vent from the No. 2 flotation unit vacuum system was tested by The National Council for Air and Stream Improvement (NCASI). The

vapors are vented to the atmosphere. Two vented bleaching towers were also tested by NCASI. The applicant has indicated that bleaching agents and aids other than those currently used, may be used in PP-1 in the future. If other bleaching agents or aids are proposed, then the facility will evaluate emission impacts to determine permitting requirement.

**Paper Production**

The processed secondary pulp fiber is pumped to the paper machines, PM-11, PM-12, PM-13, PM-14, and PM-15, where the parent rolls are produced. Much of this paper is converted to finished product at the facility. Water is removed from the incoming pulp stock by a screen. The pulp is then sprayed onto a belt where a vacuum is pulled from below to remove additional water. Residual moisture is removed from the produced paper as it is dried in the Yankee Dryers by steam and/or fuel-burning hoods. These drying processes result in emissions of VOCs from the pulp and paper. Natural gas is the primary fuel and propane is a secondary fuel for PM-11, PM-12, and PM-13 only. PM-12 and PM-13 have after-dryers that use steam from the power plant. Combustion emissions and some additional VOC emissions are generated from the fuel-burning processes. Emissions were measured from building vents and equipment vents for PM-12 and PM-14 by NCASI. Additional emissions from the additives incorporated into the process subsequent to the NCASI testing are assumed to be 100% of the VOC content, a conservatively high estimate. Following is a description of each paper machine.

**PM-11** is a 209-inch, dry crepe twin-wire periformer, manufactured by KMW, with a suction forming roll, single-felted press section, two pressure rolls, and an 18-foot Yankee dryer equipped with two 24 MMBTUH gas-fired hoods. Propane can be used as a backup fuel. The stock system is conventional, utilizing a drum save-all for fiber recovery and an air flotation clarifier for water recycling.

**PM-12** is a 209-inch, wet crepe twin-wire periformer, manufactured by KMW, with a suction forming roll, single-felted press section, two pressure rolls, an 18-foot Yankee dryer equipped with two 16.5 MMBTUH gas-fired hoods, and eighteen after-dryers. Propane can be used as a backup fuel. The stock system is conventional, utilizing a drum save-all for fiber recovery and an air flotation clarifier for water recycling.

**PM-13** is a 209-inch, dry crepe S-wrap twin-wire periformer, manufactured by KMW, with a solid forming roll, single-felted press section, two pressure rolls, an 18-foot Yankee dryer equipped with two burners rated at 16.5 MMBTUH gas-fired hoods, and eight after-dryers. Propane can be used as a backup fuel. The stock system is conventional, utilizing a drum save-all for fiber recovery and an air flotation clarifier for water recycling.

**PM-14** is a 273-inch, dry crepe twin-wire periformer, manufactured by Beloit, with a solid forming roll, single-felted press section, two pressure rolls, and an 18-foot Yankee dryer equipped with two 24 MMBTUH gas-fired hoods. The stock system is conventional, utilizing a drum save-all for fiber recovery and an air flotation clarifier for water recycling.

**PM-15** is a 273-inch, dry crepe twin-wire periformer, manufactured by Beloit, with a solid forming roll, single-felted press section, two pressure rolls, and an 18-foot Yankee dryer equipped with two

25 MMBTUH gas-fired hoods and high temperature hot water. The stock system is conventional, utilizing a disc save-all for fiber recovery and an air flotation clarifier for water recycling.

VOC emissions and organic hazardous air pollutants (HAP) were measured from Paper Machine Nos. 12 and 14 by NCASI. Emission measurements for Paper Machine No. 12 were taken at the Fourdrinier Vent, the Fan Pump Silo Vent, the Vacuum Systems Vent, the After Dryer Vent No. 1, the Yankee Dryer Vent, and the After Dryer Vent No. 2. Emission measurements for Paper Machine No. 14 were taken at the Fan Pump Silo Vent, the Yankee Wet-Side Dryer, the Yankee Dry-Side Dryer, the Vacuum Systems Vent, and the Wet End Roof Vents.

The table below summarizes the equipment used in each system line and the point of entry in the process for additives in the order they are utilized. Items in *italics* represent chemical additives and items in **bold** represent emission units that were tested by NCASI.

**Process Flow – Paper Machines**

| **PM-11** | **PM-12** | **PM-13** | **PM-14** | **PM-15** |
|---|---|---|---|---|
| *Wet Strength Resin (Grade Specific)* | *Wet Strength Resin (Grade Specific)* | *Wet Strength Resin (Grade Specific)* | *Wet Strength Resin (Grade Specific)* | |
| | *Sheet Texture (Grade Specific)* | | | *Sheet Texture (Grade Specific)* |
| Machine Chest | Machine Chest | Machine Chest | Machine Chest | |
| *Charge Control* | | | | |
| | | *Dry Strength (Grade Specific)* | *Dry Strength (Grade Specific)* | |
| *Dyes (Grade Specific)* | *Dyes (Grade Specific)* | *Dyes (Grade Specific)* | *Dyes (Grade Specific* | |
| *Absorbency Aid (Grade Specific)* | *Absorbency Aid (Grade Specific)* | *Absorbency Aid (Grade Specific)* | *Absorbency Aid (Grade Specific)* | |
| Flow Box | Flow Box | Flow Box | Flow Box | Flow Box |
| *Biocide* | *Biocide* | *Biocide* | *Biocide* | *Biocide* |
| *Defoamer* | *Defoamer* | *Defoamer* | *Defoamer* | *Defoamer* |
| Silo | **Silo** | Silo | **Silo** | Silo |
| *Wire Passivation* | *Wire Passivation (Normally off)* | *Wire Passivation* | *Wire Passivation* | *Wire Passivation* |
| Inner & Outer Wire | Inner & Outer Wire | Inner & Outer Wire | Inner & Outer Wire | Inner & Outer Wire |
| *Solvent (As Needed)* | *Solvent (As Needed)* | *Solvent (As Needed)* | *Solvent (As Needed)* | *Solvent (As Needed)* |
| | *Felt Cleaner* | *Felt Cleaner* | *Felt Cleaner* | *Felt Cleaner* |
| Wires & Felt | Wires & Felt | Wires & Felt | Wires & Felt | Wires & Felt |
| *Yankee Coating* | *Yankee Coating* | *Yankee Coating* | *Yankee Coating* | *Yankee Coating* |
| *Yankee Release* | *Yankee Release* | *Yankee Release* | *Yankee Release* | *Yankee Release* |
| Yankee Dryer | **Yankee Dryer** | Yankee Dryer | **Yankee Dryer** | Yankee Dryer |
| *Charge Additive* | | *Charge Additive* | *Charge Additive* | *Charge Additive* |
| *Polymer* | | *Polymer* | *Polymer* | *Polymer* |

| **PM-11** | **PM-12** | **PM-13** | **PM-14** | **PM-15** |
|---|---|---|---|---|
| Krofta (part of water system) | Krofta (part of water system) | Krofta (part of water system) | Krofta (part of water system) | Krofta (part of water system) |
| *Felt Cleaner (As Needed)* | *Caustic Felt Cleaner (As Needed)* | *Caustic Felt Cleaner (As Needed)* | *Caustic Felt Cleaner (As Needed)* | *Caustic Felt Cleaner (As Needed)* |
| | *Acid Felt Cleaner (As Needed)* | *Acid Felt Cleaner (As Needed)* | | |
| Felt Guardboard | Felt Guardboard | Felt Guardboard | | |
| *Dye Neutralizer (Grade Specific & part of water system)* | *Dye Neutralizer (Grade Specific & part of water system)* | *Dye Neutralizer (Grade Specific & part of water system)* | *Dye Neutralizer (Grade Specific & part of water system)* | |
| *Chlorine Neutralizer (Grade Specific & part of water system)* | *Chlorine Neutralizer (Grade Specific & part of water system)* | *Chlorine Neutralizer (Grade Specific & part of water system)* | *Chlorine Neutralizer (Grade Specific & part of water system)* | |
| | **After Dryers** | After Dryers | | |
| | | | | *Slimicide (Batch Use)* |
| | | | | White Water Tanks (Part of water system) |
| Vacuum System (not part of the direct flow of paper) | **Vacuum System (not part of the direct flow of paper)** | Vacuum System (not part of the direct flow of paper) | **Vacuum System (not part of the direct flow of paper)** | Vacuum System (not part of the direct flow of paper) |
| | | | **Wet End Roof Vents (not in the direct flow of paper)** | |

**Solvent Cleaning of Paper Machines**

**SC-1** is the designation of emissions generated from solvent cleanup of the paper machine clothing (felts and wires). Cleanup solvent is pumped from tanks or totes to paper machines PM-11, PM-12, PM-13, PM-14, and PM-15 for application on the machine clothing. The purpose of this cleanup is to rid the machine clothing of any contaminants, commonly known as stickies, which may be deposited from the paper stock going to the machines. These contaminants would adversely affect product from the machine by forming small holes or creating inconsistencies in the paper if not cleaned regularly. Additionally, smaller amounts of solvent are used occasionally for cleaning equipment at the pulp processing mill, PP-1.

**Flexographic Paper Printing**

Designs are printed on the tissue products by flexographic paper printer systems FP-1 and FP-8. All systems use water-based inks for printing.

**FP-1** consists of two flexographic printing presses that print paper parent rolls to produce printed parent rolls. These printed parent rolls become paper towel and napkin products.
**FP-8** is a 4-color, 78-inch wide, flexographic printing press, manufactured by Bretting. It was custom built and has no number. FP-8 is situated in Building No. 31 and was in operation by June of 2005.

**Extruding, Flexo-Plate Making, and Flexographic Polyethylene Printing (polyethylene film)**

The polyethylene extruder, the flexo-plate making room, and the flexographic polyethylene printing room are all housed in the Poly Plant Building. The Poly Plant building has numerous vents, the most prominent being three 5' x 5' exhaust vents down the center-line peak of the building roof. These vents have hinged-flap rain caps which result in somewhat of a horizontal discharge.

**Flexo-plate** making is conducted in the plate-making room. The plates are produced for use with all of the mill plant's flexographic printers. VOC-containing solvents are used in the finishing step of plate-making. VOC emissions from a plate washing process are discharged from the building to the RTO. Some of the solvent is recovered and recycled. A second plate washer added as part of the Mill Process Improvement Project uses in-line cleaning and minimizes the emissions of solvent.

**Flexographic printing** of the polyethylene film is conducted in the flexographic polyethylene printing room. The Mill Process Improvement Project added three new presses and replaced the catalytic oxidizer with a regenerative thermal oxidizer (RTO) having larger destruction capacity, because the catalytic oxidizer would have been too small to handle the increased printing load. Polyethylene rolls are fed into four flexographic printing presses and dried through the tunnel dryers to produce printed parent rolls of polyethylene film. The finished rolls are stored and transferred to locations within the facility where the product may be needed. Emissions from the plant are VOC generated from solvents and inks, combustion products from the oxidation of such through the regenerative thermal oxidizer, and combustion products from the tunnel dryers. A complete enclosure was constructed around all four presses such that a negative pressure is maintained, resulting in 100% capture of all VOC. The combustion chamber temperature of the RTO is continuously monitored to ensure destruction efficiency greater than 95%.

**Steam and Electricity Co-generation (power plant)**

The facility has a power plant utilizing four boilers, identified as emission units B-1, B-2, B-3, and B-4, which co-generate most of the electrical and steam needs of the facility. B-2 will be replaced with B-5. They are fueled by coal and other fossil fuels. The ash residue generated from this operation is landfilled in an approved on-site landfill. Opacity of the boiler emissions is monitored continuously and recorded by the use of strip charts. Following is a description of each boiler.

**B-1** is a natural gas-fired package boiler rated at 310 MMBTUH. The unit co-generates steam and electricity for use on-site. It shares a common stack with boiler B-2.

**B-2** is primarily a pulverized coal-fired boiler rated at 440 MMBTUH. It is capable of firing natural gas as a backup fuel. The unit co-generates steam and electricity for use on-site. It uses an electrostatic precipitator (ESP) for particulate control and shares a common stack with boiler B-1.

**B-3** is primarily a pulverized coal-fired boiler rated at 557.11 MMBTUH. It is capable of firing natural gas as a backup fuel. The unit co-generates steam and electricity for use on-site. It uses a baghouse for particulate control and shares a common stack with boiler B-4.

**B-4** is primarily a pulverized coal-fired boiler rated at 557.11 MMBTUH. It is capable of firing natural gas as a backup fuel. The unit co-generates steam and electricity for use on-site. It uses a baghouse for particulate control and shares a common stack with boiler B-3.

**B-5** will be a natural gas-fired package boiler rated at 415 MMBTUH. The unit will co-generate steam and electricity for use on-site. It will replace boiler B-2 and will utilize Stack #2, a stack that was built for Boiler B-3 but was abandoned in the 1980s and remained inactive since then.

**Emergency Engines**

The facility has two emergency backup power generators used only for emergency power in the event of a complete power loss. Otherwise they are operated only for periodic capability tests.

**DG-1** is a 1,200 KW, Marathon Electric, Magna One, Model # 683 FDR8126GG W, Serial # LM-93152-11/20, with a diesel-fueled Caterpillar engine, Serial # 24Z00499.

**DG-2** is a 1,200 KW, Marathon Electric, Magna One, Model # 683 FDR8126GG W, Serial # LM-93152-11/13, with a diesel-fueled Caterpillar engine, Serial # 24Z00501.

**DFP-1** is a 240-horsepower Cummins N-855-F, diesel fire pump.

**Coal Preparation Plant**

The coal preparation plant supplies the boilers with pulverized coal fuel. All emission units except the coal pile and preceding unloading/conveying equipment are subject to the provisions of 40 CFR, Part 60, Subpart Y, "Standards of Performance for Coal Preparation Plants." Initial performance testing was completed. Subpart Y does not contain monitoring requirements. More detail on the applicability criteria is found in the NSPS discussion of Section VIII.

**Coal Storage**

Coal fuel used in the boilers is stored in an outdoor storage pile (FS-1) prior to processing into pulverized coal. Solid, bituminous and sub-bituminous coal is delivered by railcar and unloaded into a below-grade receiving bin. Some coal is also occasionally received by truck and unloaded

into the coal pile. A conveyor moves the coal from the receiving bin to a radial stacker. The radial stacker unloads the coal into an aboveground stockpile.

**Coal Processing and Conveying Equipment**

A front-end loader is then used to transfer coal from the storage stockpile to the grizzly feeder. A conveyor transfers the coal from the grizzly feeder to the sizer/crusher for sizing, which also separates debris such as rocks. Except for the outlet chute opening to the conveyor, the sizer/crusher is enclosed and housed in a small building. There are openings on two sides of the building for the ingoing and outgoing conveyors. From the sizer/crusher, a conveyor transfers the sized coal to the coal bunkers ahead of the coal feeders, which in turn feed the pulverizers and subsequently the boilers. The coal feeders and pulverizers are enclosed processes. Dust suppression systems are located at the railcar unloading, the grizzly feeder, and the sizer/crusher.

**Wastewater Treatment Plant**

The facility also operates its own wastewater treatment plant consisting of primary and secondary treatment stages. The solid wastewater residues are landfilled on-site.

## SECTION III. EQUIPMENT

The following tables list the Emission Units (EUs) at the facility that contribute to a process that generates significant emissions. The tables are categorized by Emission Unit Groups (EUGs), based on the type of emission and/or an applicable rule.

### EUG 1 – Boilers

EUG 1 includes boilers and the DSI System serving Boilers B-3 and B-4. Boilers B-1, B-2, B-3 and B-4 are subject to 40 CFR Part 60, Subpart D, "Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971." Boiler B-5 will be subject to 40 CFR 60 Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.

**EUG 1 – Boilers**

| EU ID | Manufacturer | Boiler Rating (MMBtu/hr) | Burner Model | Construct Date |
|---|---|---|---|---|
| **B-1** | Zurn Industires, Inc. | 310 | Keystone SAOH-MJ-DAR-48 | 1975 |
| **B-2** | Babcock & Wilcox Company | 440 | BW-24089 | 1975 |
| **B-3** | Combustion Engineering, Inc. | 557.11 | VU-40 | 1978 |
| **B-4** | Riley Stoker | 557.11 | RX Turbofurnace | 1981 |
| **B-5** | Rentech | 415 | JZHC/Coen ECOjet | Pending 2016 |
| | | **DSI Throughput (lbs/hr)** | | |
| **DSI** | Dustex | 30 lbs/hr per boiler | | Pending 2016 |

**EUG 2 – Combustion Sources Not Subject to NSPS or NESHAP**

EUG 2 includes emission units that have combustion emissions not subject to an NSPS or a NESHAP performance standard.

**EUG 2 – Combustion Sources Not Subject to NSPS or NESHAP**

| EU ID | EU Name | Model # | Burner Manuf. | Burner Rating (MMBTUH) | Construction Date |
|---|---|---|---|---|---|
| **PM-11** | Paper Machine #11 | Kinedizer 27M | Maxon | 2 x 24 | 1975 |
| **PM-12** | Paper Machine #12 | Oven-Pak EB6 Model 400 | Maxon | 2 x 16.5 | 1975 |
| **PM-13** | Paper Machine #13 | Oven-Pak EB6 Model 400 | Maxon | 2 x 16.5 | 1979 |
| **PM-14** | Paper Machine #14 | Combustifume | Maxon | 2 x 24 | 2015* |
| **PM-15** | Paper Machine #15 | LV-85 | Maxon | 2 x 25 | 1992 |
| **PO-1** | Printing Press #1 Tunnel Dryer | 80AH | Eclipse | 4 x 3.2 | 1983 |
| **PO-1** | Printing Press #2 Tunnel Dryer | 160AH | Eclipse | | 2006 |
| **PO-1** | Printing Press #3 Tunnel Dryer | 120RAH | Eclipse | | 2006 |
| **PO-1** | Printing Press #4 Tunnel Dryer | 80RAH | Eclipse | | 2006 |
| **PO-1** | Regenerative Thermal Oxidizer | Durr, Model RL 60 | | 9.6 | 2006 |

* Like-kind replacement notification to DEQ submitted on October 29, 2015.

**EUG 3 – Coal Preparation Plant**

EUG 3 consists of the Coal Preparation Plant and includes all emission units subject to the provisions of 40 CFR, Part 60, Subpart Y, "Standards of Performance for Coal Preparation Plants," which include coal processing and conveying equipment (including breakers and crushers) and coal storage systems in coal preparation plants that process more than 200 tons per day, as well as emission units not subject to Subpart Y. The railcar unloading and radial stacker preceding the coal pile are not subject to the standards.

**EUG 3 – Coal Preparation Plant**

| EU ID | EU Name | Manufacturer/Model# | Construct Date |
|---|---|---|---|
| | Railcar Unloading | FEECO | 1991, est. |
| | Radial Stacker | FEECO | 1991, est. |
| **FS-1** | Coal Pile | Open Pile – Not Applicable | 1975 |
| | Grizzly Feeder | FEECO / Fairfield | 1991, est. |
| | Coal Sizer/Crusher | Gundlach / Model#56-DA-1294 | 1977, est. |
| | Conveyor | Fort Howard (Manufactured on-site while Mill | 1977, est. |

| EU ID | EU Name | Manufacturer/Model# | Construct Date |
|---|---|---|---|
| | | was owned by Fort Howard) | |
| **B-2** | Coal Bunkers | B&W | 1975, est. |
| **B-2** | Coal Feeders | Stock Equipment Co./ Gravimetric Feeder | 1975, est. |
| **B-2** | Pulverizers | #493 C-E Raymond Bowl Mill (replaced B&W/ EL50 Ball Mill, 1975, est.) | 2008 |
| **B-3** | Coal Bunkers | CE | 1978, est. |
| **B-3** | Coal Feeders | Stock Equipment Co. / Gravimetric Feeder | 1978, est. |
| **B-3** | Pulverizers | CE / Bowl Mill 533ARB | 1978, est. |
| **B-4** | Coal Bunkers | Riley | 1981, est. |
| **B-4** | Coal Feeders | Merrick / Coalometer | 1981, est. |
| **B-4** | Pulverizers | Riley / 556 Hammer Mill | 1981, est. |

**EUG 4 – PP-1 Pulp Processing Units (Subpart S Affected/No Applicable Standards)**

EUG 4, PP-1 Pulp Processing Units, emits VOCs from the bleaching and pulping processes. Some of these units are affected processes under 40 CFR Part 63, Subpart S, "National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry," but are not subject to any performance standard or other requirements at this time because of the type of bleaching agents currently used in the pulping process. The facility uses secondary wood (recycled paper) fiber and is therefore an affected facility. However, as a result of the processes and bleaching chemicals used in producing the secondary fiber pulp, there are no standards in the subpart that currently apply to the facility. Therefore, this EUG is reserved for any future Subpart S regulated units. Emissions from these units are included with those for EUG 6. The Mill Process Improvement Project modified several items as identified by a 2006 construction date in the following table, without altering the applicability of any MACT requirements. The bulk of these changes occurred in System 5.

**Pulp Processing Units**

| EU Name | Construction Date |
|---|---|
| Pulpers (not system specific) | 1977, 1979, 1981, 1983, 1992, est. |
| Unbleached Stock Blend Tanks | 1977 & 1983, est. |
| Screens | 1977, 1979, 1981, 1983, & 1992, est., 2006 |
| Unbleached Washers | 1977, est., 2006 |
| Flotation Cell Washers | 1977, 1979, 1981, 1983, & 1992, est., 2006 |
| Unbleached Thickener | 1977 & 1992, est. |
| Bleached Washers | 1977, 1981, 1983, 1992, est., 2006 |
| Storage (not system specific) | 1977, 1979, 1981, 1983, 1992 est. |
| Bleach Towers | 1977, 1979, 1981, 1983, 1992, est. |
| Thickeners | 1979, 1981, 1983, est., 2006 |
| Unbleached Stock Presses | 1992, est., 2006 |
| Mixers | 1992, est. |
| Cleaners | 1992, est., 2006 |

## EUG 5 – Subpart KK Flexographic Printing

EUG 5 includes emission units that have flexographic printing presses and auxiliary equipment subject to 40 CFR Part 63, Subpart KK, "National Emission Standards for the Printing and Publishing Industry." Three additional flexographic polyethylene printers, #2, #3, and #4 were added by the Mill Process Improvement Project in 2006.

**EUG 5 – Subpart KK Flexographic Printing**

| EU ID | EU Name | Manufacturer/Model No. | Construct Date |
|---|---|---|---|
| PO-1 | Flexographic Polyethylene Printer #1 | PCMC* Model No. 6795, 6-color w/ vapor collection hood and tunnel dryer | June, 1984 |
| | Flexographic Polyethylene Printer #2 | PCMC* Model No. 6294, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #3 | PCMC* Model No. M-2529, 8-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #4 | PCMC* Model No. 7148, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| FP-1 | Flexographic Paper Printers (two) | Flexo 31-005 – PCMC/Model No. 6992<br>Flexo 31-008 – PCMC/Model No. 7416 | 1990<br>1993 |
| FP-8 | Flexographic Polyethylene Printer | Bretting, 4-color, 78-inch wide | June, 2005 |

* Paper Converting Machine Company

## EUG 6 – VOC Emissions Not Covered by an NSPS or NESHAP

EUG 6 includes emission units that are subject to a VOC limit or may potentially be subject to OAC 252:100-42. It includes units that are part of the paper making process, having VOC or HAP emissions and not subject to Subpart S (PP-1 Pulp Processing Units are affected but not subject to standards at this time), units not subject to an NSPS or NESHAP performance standard, and units subject to an NSPS or NESHAP performance standard but emitting VOC pollutants not covered by the standard (such as the flexographic printers).

**EUG 6 – VOC Emissions Not Covered by an NSPS or NESHAP**

| EU ID | EU Name | Manufacturer/Model/Serial # | Construct Date |
|---|---|---|---|
| PP-1 | Pulp Processing Units | Components listed below | 1975-1992 |
| PM-11 | Paper Machine #11 | KMW | 1975 |
| PM-12 | Paper Machine #12 | KMW | 1975 |
| PM-13 | Paper Machine #13 | KMW | 1979 |
| PM-14 | Paper Machine #14 | Beloit | 1981 |
| PM-15 | Paper Machine #15 | Beloit | 1992 |
| | Paper Machine Additives | NA | |
| SC-1 | Solvent Cleaning PM-11, PM-12, PM-13, PM-14 | NA | 1975 |
| PM-15 | Solvent Cleaning | NA | 1992 |

| EU ID | EU Name | Manufacturer/Model/Serial # | Construct Date |
|---|---|---|---|
| PO-1 | Flexo-plate making | Anderson-Vreeland | June, 1984 |
| PO-1 | Flexographic Polyethylene Printer #1 | Paper Converting Machine Company (PCMC), Model No. 6795, 6-color w/ vapor collection hood and tunnel dryer | June, 1984 |
| | Flexographic Polyethylene Printer #2 | PCMC* Model No. 6294, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #3 | PCMC* Model No. M-2529, 8-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #4 | PCMC* Model No. 7148, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| FP-1 | Flexographic Paper Printers (two) | Flexo 31-005 – PCMC/Model No. 6992<br>Flexo 31-008 – PCMC/Model No. 7416 | 1990<br>1993 |
| FP-8 | Flexographic Polyethylene Printer | Bretting, 4-color, 78-inch wide | 2005 |

**Note:** Although all of the equipment items listed in the following table are part of the pulping process, not all of them are listed in the permit. The equipment list included in the permit was revised to reflect only those units that have emissions, i.e., it does not include closed units.

| PP-1 Pulp Processing Units | |
|---|---|
| **EU Name** | **Construction Date** |
| Pulpers (not system specific) | 1975, 1979, 1981, 1983, 1992, est. |
| Unbleached Stock Blend Tanks | 1975 & 1983, est. |
| Screens | 1975, 1979, 1981, 1983, & 1992, est. |
| Unbleached Washers | 1975, est. |
| Flotation Cell Washers | 1975, 1979, 1981, 1983, & 1992, est. |
| Unbleached Thickener | 1975 & 1992, est. |
| Bleached Washers | 1975, 1981, 1983, 1992, est. |
| Storage (not system specific) | 1975, 1979, 1981, 1983, 1992 est. |
| Bleach Towers | 1975, 1979, 1981, 1983, 1992, est. |
| Thickeners | 1979, 1981, 1983, est. |
| Unbleached Stock Presses | 1992, est. |
| Mixers | 1992, est. |
| Cleaners | 1992, est. |

**EUG 7 – Non-Combustion PM Sources Not Subject to NSPS or NESHAP**

EUG 7 includes emissions units that have non-combustion, particulate process emissions, not subject to an NSPS or a NESHAP performance standard.

**EUG 7 – Non-Combustion PM Sources Not Subject to NSPS or NESHAP**

| EU ID | EU Name | Manufacturer/Serial # | Construct Date |
|---|---|---|---|
| PM-11 | Paper Machine #11 | KMW | 1975 |
| PM-12 | Paper Machine #12 | KMW | 1975 |
| PM-13 | Paper Machine #13 | KMW | 1979 |
| PM-14 | Paper Machine #14 | Beloit | 1981 |
| PM-15 | Paper Machine #15 | Beloit | 1992, additional particulate control 11/2014 |

**EUG 8 - Emergency Engines DG-1, DG-2, DFP-1**

| Table 16 | |
|---|---|
| DG-1 | 1,200 KW generator - Marathon Electric, Magna One, Model# 683 FDR8126GG W, Serial # LM-93152-11/20, w/ Caterpillar engine, Serial# 24Z00501 |
| DG-2 | 1,200 KW generator - Marathon Electric, Magna One, Model# 683 FDR8126GG W, Serial # LM-93152-11/13, w/ Caterpillar engine, Serial# 24Z00499 |
| DFP-1 | 240-horsepower Cummins N-855-F, diesel fire pump |

## SECTION IV. EMISSIONS

Emissions calculations are taken from Permit No. 99-113-C (M-4) PSD. Because of the length of the emission discussions and illustrative tables for each Emission Unit, a facility emission summary table is first offered in this section. For combustion emissions, the highest from all fuels considered is shown. Emission calculations for each emission unit identified in the applications, as re-grouped into the following Emission Unit Groups, are detailed in the discussion and tables following this section.

The next five tables summarize facility-wide potential emissions based on current data available and do not reflect actual emissions. Where stack tests are used to determine potential emissions, subsequent stack testing could change these potential emission estimates. Federal limits and standards (NSPS, AP-42, BMACT) were used to determine potential emissions. The specific citations for each emission factor are documented with footnotes within each table. The heating value conversion basis for emissions factors from AP-42 was changed from 1,000 Btu/scf to 1,020 Btu/scf. Emissions of $PM_{2.5}$ are included as a separate table due to space restrictions in the existing summary table.

**Facility-Wide Emissions Summary**

| Combustion Emissions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Boilers** | **$PM_{10}$ (TPY)** | **$NO_X$ (TPY)** | **$SO_2$ (TPY)** | **VOC (TPY)** | **CO (TPY)** | **HCL (TPY)** | **$H_2SO_4$ (TPY)** | **HF (TPY)** |
| B-1 (310 MMBTUH) | 10 (2) | 135 (2) | 0.8 (2) | 7.3 (2) | 110 (2) | NA | NA | NA |
| B-2 (440 | 90.2 (1) | 1,350 (3) | 2,310 (3) | 140(6) | 48 (7) | 42 (8) | 46.25 (9) | 14 (10) |

| Combustion Emissions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Boilers** | **$PM_{10}$ (TPY)** | **$NO_X$ (TPY)** | **$SO_2$ (TPY)** | **VOC (TPY)** | **CO (TPY)** | **HCL (TPY)** | **$H_2SO_4$ (TPY)** | **HF (TPY)** |
| MMBTUH) | | | | | | | | |
| B-3 (557.11 MMBTUH) | 114 (1) | 1708.1 (3) | 2928.2 (3) | 7 (11) | 61 (7) | 53.683 (8) | 20.497 (12) | 18 (10) |
| B-4 (557.11 MMBTUH) | 114 (1) | 1708.1 (3) | 2928.2 (3) | 13.16 (2) | 200.95 (2) | 53.683 (8) | 20.497 (12) | 18 (10) |
| B-5 (415 MMBTUH) | 14 (2) | 360 (2) | 1.09 (2) | 9.80 (2) | 90 (13) | NA | NA | NA |
| DSI System | 1.13E-5 | | | | | | | |
| **Paper Machines** | | | | | | | | |
| PM-11 (48 MMBTUH) | 1.6(2) | 20.6 (2) | 0.1 (2) | 1.1 (2) | 17 (2) | | | |
| PM-12 (33 MMBTUH) | 1.1 (2) | 14.2 (2) | 0.09 (2) | 0.78 (2) | 12 (2) | | | |
| PM-13 (33 MMBTUH) | 1.1 (2) | 14.2 (2) | 0.09 (2) | 0.78 (2) | 12 (2) | | | |
| PM-14 (48 MMBTUH) | 1.6 (2) | 20.6 (2) | 0.1 (2) | 1.1 (2) | 17 (2) | | | |
| PM-15 (50 MMBTUH) | 1.6 (2) | 21.5 (2) | 0.1 (2) | 1.2 (2) | 18 (2) | | | |
| **PO-1 Dryer #1 (3.2 MMBTUH)** | 0.1 (2) | 1.37 (2) | 0.008 (2) | 0.076(2) | 1.2 (2) | | | |
| **PO-1 Dryer #2 (3.2 MMBTUH)** | 0.1(2) | 1.37 (2) | 0.008 (2) | 0.076(2) | 1.2 (2) | | | |
| **PO-1 Dryer #3 (3.2 MMBTUH)** | 0.1 (2) | 1.37 (2) | 0.008 (2) | 0.076 (2) | 1.2 (2) | | | |
| **PO-1 Dryer #4 (3.2 MMBTUH)** | 0.1 (2) | 1.37 (2) | 0.008 (2) | 0.076(2) | 1.2 (2) | | | |
| **PO-1 Regenerative Thermal Oxidizer (9.6 MMBTUH)** | 0.31 (2) | 4.12 (2) | 0.02 (2) | 0.23 (2) | 3.5 (2) | | | |
| **DG-1** | 0.15 | 4.72 | 0.52 | 0.12 | 1.25 | NA | NA | NA |
| **DG-2** | 0.15 | 4.72 | 0.52 | 0.12 | 1.25 | NA | NA | NA |
| **DFP-1** | 0.13 | 1.86 | 0.12 | 0.15 (4) | 0.40 | NA | NA | NA |
| **Subtotal** | **350.34 (14)** | **5,373.2** | **8,169.982** | **183.144** | **597.15** | **149.366** | **87.24** | **50** |

| Non-Combustion Emissions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Coal Handling** | **PM (TPY)** | **$NO_X$ (TPY)** | **$SO_2$ (TPY)** | **VOC (TPY)** | **CO (TPY)** | **HCL (TPY)** | **$H_2SO_4$ (TPY)** | **HF (TPY)** |
| Railcar Unloading | 35.23 | | | | | | | |
| Radial Stacker | | | | | | | | |
| Grizzly Feeder | | | | | | | | |
| Coal Sizer/ Crusher | 82.03 | | | | | | | |
| Conveying | 8.20 | | | | | | | |
| Coal Bunkers | 8.20 | | | | | | | |
| Coal Feeders | Closed Process (5) | | | | | | | |
| Pulverizers | | | | | | | | |
| FS-1 | 14.76 (5) | | | | | | | |
| **Subtotal** | **148.42** | | | | | | | |
| **Paper Making** | | | | | | | | |
| PP-1 Pulping Process | | | | 123.17 | | | | |
| Paper Making | 54.97 | | | 98.83 | | | | |
| Paper Machine Additives | | | | 10.55 | | | | |
| Paper Machine PM-11, 12, 13, & 14 Solvents | | | | 179.1 | | | | |
| Paper Machine PM-15 Solvents | | | | 37.57 | | | | |
| PM-15 Winder Dust Collection | 9.82 | | | | | | | |
| PO-1 Extruder | 0.52 | | | 0.02 | | | | |
| **Subtotal** | **65.31** | | | **449.24** | | | | |
| **Printing** | | | | | | | | |
| Plate Making | | | | | | | | |
| | | | | | | | | |
| PO-1 Printer (#1, #2, #3, #4) | | | | 48.6 | | | | |
| Ozone Treaters | | | | | | | | |
| FP-1, FP-8 Printer | | | | 92.28 | | | | |
| | | | | | | | | |
| Subtotal | | | | **140.88** | | | | |
| **Facility Total** | **564.07** | **5,373.2** | **8,169.98** | **773.26** | **597.15** | **149.36** | **87.24** | **50** |

(1) - Coal fired emissions. PM factor based on BMACT limit of 0.04lb/MMBTU. This is a total filterable factor. The condensable portion of PM is 0.01 lb/MMBTU (AP-42, 7/98, Table 1.1-5, Footnote f). $PM_{10}$ and $PM_{2.5}$ factors are derived using Particle Size Distribution Factors in AP-42 (7/98) Table 1.1-6. (For PM10: 0.04 lb/MMTBU *92% for baghouse control = 0.0368 lb/MMBTU + 0.01 lb/MMBTU condensable for a total factor of 0.0468 lb/MMBTU) (53% is the factor used for $PM_{2.5}$).

(2) - Natural gas emissions, factors from AP-42 (7/98). $NO_X$, CO: Table 1.4-1. $SO_2$, VOC, PM: Table 1.4-2, HHV of 1,020 btu/scf is used for all natural gas calculations.
(3) - Based on limits in NSPS subpart D; emission factor for $NO_X$: 0.7 lb/MMBTU; for $SO_2$: 1.2 lb/MMBTU
(4) - VOC emissions for the Diesel Fire Pump are calculated as TOC.
(5) - Closed Process No emissions.
(6) - This emission is based on a January 2003 stack test (EF of 0.075 lb/MMBTU). This value is used because it is higher than the AP-42 factor in Table 1.1-9. (B-2 to be removed 2017).
(7) - AP-42 (7/98) Table 1.1-3, EF of 0.5 lb/ton (0.025 lbs/MMBtu using conversion factor of 20 MMBtu/ton).
(8) - Based on BMACT EF of 0.022 lb/MMBTU.
(9) - This emission is based on a May, 2003 stack test (EF of 0.024 lb/MMBTU). This value is used because it is higher than the AP-42 factor in Table 1.1-15. (B-2 removed 2017)
(10) - AP-42 (7/98) Table 1.1-15, EF of 0.15 lb/ton. This is divided by 20 (Table 1.1-5, footnote e, sub-bituminous coal) to get an EF of 0.0075 lb/MMBTU.
(11) - AP-42 (7/98) Table 1.1-9, EF of 0.06 lb/ton. This is divided by 20 (Table 1.1-5, footnote e, sub-bituminous coal) to get an EF of 0.003 lb/MMBTU.
(12) - 0.7% of the $SO_2$ value, from AP-42 (7/98) Table 1.1-3, footnote b.
(13) - Based on vendor guarantee.
(14) DSI emissions of 0.0000113 tons not shown in total.
(15) - Emission factor of 0.1 lb NOx/MMBTU, which is derived from 744 lb $NO_X$/day limit, per permit 2010-278-TVR (M-1) Condition 1.D.

| **$PM_{2.5}$ Emission Factors** | | | | | | |
|---|---|---|---|---|---|---|
| **Source** | **$PM_{2.5}$ Emission Factor** | **$PM_{2.5}$ Emission Factor Units** | **$PM_{2.5}$ Emission Factor Source** | **Burner Rating or Throughput Factor** | **Burner Rating or Throughput Factor Units** | **Total $PM_{2.5}$ Emissions TPY** |
| **DSI System** | 0.005 | Gr/scf | Vendor | | | 1.13E-05 |
| **B-1** | 7.6 | #/MMCF Gas Burned | AP-42 | 0.304 | MMCF/hr | 10 |
| **B-2 High Btu** | 0.0312 | #/MMBtu Coal Burned | BMACT(1) | 440 | MMBtu/hr | 60.1 |
| **B-2 Low Btu** (1) | 0.0312 | #/MMBtu Coal Burned | BMACT(1) | 440 | MMBtu/hr | 60.1 |
| **B-3** (1) | 0.0312 | #/MMBtu Coal Burned | BMACT(1) | 557.11 | MMBtu/hr | 76.1 |
| **B-4** (1) | 0.0312 | #/MMBtu Coal Burned | BMACT(1) | 557.11 | MMBtu/hr | 76.1 |
| **B-5** | 7.6 | #/MMCF Gas Burned | AP-42 | 415 | MMBtu/hr | 14 |
| **PM-11 Dryer Hoods** | 7.6 | #/MMCF Gas Burned | AP-42 | 0.047 | MMCF/hr | 1.6 |
| **PM-12 Dryer Hoods** | 7.6 | #/MMCF Gas Burned | AP-42 | 0.032 | MMCF/hr | 1.1 |
| **PM-13 Dryer Hoods** | 7.6 | #/MMCF Gas Burned | AP-42 | 0.032 | MMCF/hr | 1.1 |
| **PM-14 Dryer Hoods** | 7.6 | #/MMCF Gas Burned | AP-42 | 0.047 | MMCF/hr | 1.6 |
| **PM-15 Dryer Hoods** | 7.6 | #/MMCF Gas Burned | AP-42 | 0.049 | MMCF/hr | 1.6 |

| $PM_{2.5}$ Emission Factors | | | | | | |
|---|---|---|---|---|---|---|
| **Source** | **$PM_{2.5}$ Emission Factor** | **$PM_{2.5}$ Emission Factor Units** | **$PM_{2.5}$ Emission Factor Source** | **Burner Rating or Throughput Factor** | **Burner Rating or Throughput Factor Units** | **Total $PM_{2.5}$ Emissions TPY** |
| **PM-11 Non-Combustion Dust** (6) | 9% of 0.204 | #PM Total / Ton Paper Produced | NCASI Tech Bulletin 942 - Mill C | 91,250 | Tons of Air-dried Finished Paper | 0.838 |
| **PM-12 Non-Combustion Dust** (6) | 9% of 0.204 | #PM Total / Ton Paper Produced | NCASI Tech Bulletin 942 - Mill C | 127,750 | Tons of Air-dried Finished Paper | 1.17 |
| **PM-13 Non-Combustion Dust** (6) | 9% of 0.204 | #PM Total / Ton Paper Produced | NCASI Tech Bulletin 942 - Mill C | 109,500 | Tons of Air-dried Finished Paper | 1.01 |
| **PM-14 Non-Combustion Dust** (6) | 9% of 0.204 | #PM Total / Ton Paper Produced | NCASI Tech Bulletin 942 - Mill C | 109,500 | Tons of Air-dried Finished Paper | 1.01 |
| **PM-15 Non-Combustion Dust** (6) | 9% of 0.204 | #PM Total / Ton Paper Produced | NCASI Tech Bulletin 942 - Mill C | 100,845 | Tons of Air-dried Finished Paper | 0.926 |
| **PM-15 Winder Dust Collection** (10) | 2.24 | #PM / Hour | Engineering Data | 8,760 | Hours / Year | 9.82 |
| **Ash Handling** | 15% of 0.0859 | #PM / Ton of Ash Handled | EPA PM Calc Database | 51,000 | Tons of Ash | 0.929 |
| **Ash Storage Silo** (7) | 0.15% of 3.14 | #PM / Ton Ash Produced | EPA PM Calc Database | 51,000 | Tons of Ash | 0.120 |
| **Coal Pile** (8) | 9% of 8.5 | kg PM Emitted / Hectare-Day | EPA PM Calc Database | 465,000 sq. ft. | Hectares of coal stored | 1.3 |
| **Coal Handling** (8), (9) | 9% of 0.1259 | Total #PM / Ton of Coal Handled | EPA PM Calc Database | 820,200 | Tons of Coal | 4.647 |

(1) - BMACT limit for particulate is 0.04 #/MMBTU (Total Filterable). The $PM_{2.5}$ limit is 0.021 lbs/MMBTU (F) + 0.01 lbs/MMBTU (condensable) for a total factor of 0.031 lbs/MMBTU. $PM_{2.5}$ factors are derived using Particle Size Distribution Factors in AP-42 (7/98) Table 1.1-6. 53% is the factor used for $PM_{2.5}$.

(6) - $PM_{2.5}$ emission factor: NCASI Tech Bulletin 942 - Mill C (similar Paper Machine) average % of filterable. Average of five paper machine vents at the G-P Rincon, Georgia Mill (28%+6%+2%+7%+1%)/5 = 8.8% of 0.204 lbs-PM/ton-paper.

(7) - $PM_{2.5}$ emission factor: Per PMCalc (EPA PM Calculator now called PM Augmentation) $PM_{2.5}$ is 0.15% if using baghouse as primary control.

(8) - $PM_{2.5}$ emission factor: Per PMCalc $PM_{2.5}$ is 9% if using dust suppression by water spray as primary control.

(9) - PM Total emission factor: Includes coal unloading, stacking, loading, conveying, crushing and bunker loading using AP-42 13.2.4 & EPA Review of Surface Mining Operations.

(10) - #PM/Hour factor is based on engineering data (i.e. grain loading, air flow rate) along with an additional safety factor of 2.81 TPY. 9.82 TPY limit is found in Permit Condition 1 Table 15 of Permit 2010-278-TVR (M-1).

## EUG 1 – Boilers

Emissions calculations for Boilers B-1, B-2, B-3 and B-4 are carried forward from the existing Title V permit. The following emission calculations are based on either AP-42 factors or emission testing as footnoted. Permit limits are based on regulatory limits, justified by modeling to establish compliance with existing air quality standards at the time of issuance of Permit No. PSD-OK-404. There were no changes to the boilers in the Mill Process Improvement Project under Permit No. 99-113-C (M-4).

Stack tests for Boiler B-2 burning High Btu coal were conducted on January 7, 8, and 9, 2003. Stack tests for Boiler B-2 burning Low Btu coal were conducted on May 16 and 17, 2003 and September 2009. Stack tests for Boiler B-3 burning Powder River Basin coal were conducted on May 20 and 21, 2003. Stack tests for Boiler B-4 burning Powder River Basin coal were conducted on April 15 and 16, 2003. The results of the most recent tests are contained in reports prepared by Western Environmental Services and Testing, Inc., received by AQD on November 6, 2003, with the applicant's response to an NOD dated June 12, 2003. Fuel oil data is excluded here, since the facility states that it no longer has the ability to burn oil. Boilers B-2 and B-3 utilize natural gas igniters only, and are not capable of reaching full nameplate load burning gas.

Emission calculations for Boiler B-5 are based on AP-42 and manufacturer's data and 8,760 hours of operation annually.

**EUG 1 – Boilers**

| EU ID | Boiler Rating (MMBtu/hr) | Firing Configuration | Controls | Low $NO_X$ | Fuels |
|---|---|---|---|---|---|
| B-1 | 310 | Forced Draft Package | None | No | Gas |
| B-2 | 440 | Wall Fired | Electrostatic Precipitator | No | Coal/Gas |
| B-3 | 557.11 | Tilting Tangential | Baghouse Filter | No | Coal/Gas |
| B-4 | 557.11 | Wall Fired, Opposing Walls | Baghouse Filter | Yes | Coal/Gas |
| B-5 | 415 | Forced Draft | None | Yes | Gas |

| | COAL | | NATURAL GAS | |
|---|---|---|---|---|
| **B-1 310 MMBTUH** | **Emissions Factor** | **Emissions (TPY)** | **Emissions Factor** | **Emissions (TPY)** |
| $PM_{10}$ | NA | NA | 7.6 lbs / MMCF (1) | 10 |
| $NO_X$ | NA | NA | 0.1 lbs / MMBTU (11) | 135 |
| $SO_2$ | NA | NA | 0.6 lbs / MMCF (1) | 0.8 |
| VOC | NA | NA | 5.5 lbs / MMCF (1) | 7.3 |
| CO | NA | NA | 84 lbs / MMCF (1) | 110 |
| HCL | NA | NA | NA | NA |
| $H_2SO_4$ | NA | NA | NA | NA |
| HF | NA | NA | NA | NA |

| | COAL | | NATURAL GAS | |
|---|---|---|---|---|
| **B-2 440 MMBTUH** | **Emissions Factor** | **Emissions (TPY)** | **Emissions Factor** | **Emissions (TPY)** |
| $PM_{10}$ (Hi Btu Coal) | 0.0468 lbs [2] MMBtu | 90.2 | NA | NA |
| $PM_{10}$ (Lo Btu Coal) | 0.0468 lbs [2] MMBtu | 90.2 | NA | NA |
| $NO_X$ (Hi Btu Coal) | 0.7 lbs [3] MMBtu | 1,350 | NA | NA |
| $NO_X$ (Lo Btu Coal) | 0.7 lbs [3] MMBtu | 1,350 | NA | NA |
| $SO_2$ (Hi Btu Coal) | 1.2 lbs [3] MMBtu | 2,310 | NA | NA |
| $SO_2$ (Lo Btu Coal) | 1.20 lbs [3] MMBtu | 2,310 | NA | NA |
| VOC (Hi Btu Coal) | 0.075 lbs [4] MMBtu | 140 | NA | NA |
| VOC (Lo Btu Coal) | 0.075 lbs [4] MMBtu | 140 | NA | NA |
| CO (Hi Btu Coal) | 0.025 lbs [5] MMBtu | 48 | NA | NA |
| CO (Lo Btu Coal) | 0.025 lbs [5] MMBtu | 48 | NA | NA |
| HCL (Hi Btu Coal) | 0.022 lbs[6] MMBtu | 42 | NA | NA |
| HCL (Lo Btu Coal) | 0.022 lbs [6] MMBtu | 42 | NA | NA |
| $H_2SO_4$ (Hi Btu Coal) | 0.024 lbs [7] MMBtu | 46 | NA | NA |
| $H_2SO_4$ (Lo Btu Coal) | 0.024 lbs [7] MMBtu | 46 | NA | NA |
| HF (Hi Btu Coal) | 0.0075 lbs [8] MMBtu | 14 | NA | NA |
| HF (Lo Btu Coal) | 0.0075 lbs [8] MMBtu | 14 | NA | NA |
| **B-3 557.11 MMBTUH** | **Emissions Factor** | **Emissions (TPY)** | **Emissions Factor** | **Emissions (TPY)** |
| $PM_{10}$ | 0.0468 lbs [2] MMBtu | 114 | NA | NA |
| $NO_X$ | 0.7 lbs [3] MMBtu | 1708.1 | NA | NA |
| $SO_2$ | 1.2 lbs [3] MMBtu | 2,928.2 | NA | NA |
| VOC | 0.003 lbs [9] MMBtu | 7 | NA | NA |

| | COAL | | NATURAL GAS | |
|---|---|---|---|---|
| CO | 0.025 lbs (5) MMBtu | 61 | NA | NA |
| HCL | 0.022 lbs (6) MMBtu | 53.683 | NA | NA |
| $H_2SO_4$ | 0.0084 lbs(10) MMBtu | 20.497 | NA | NA |
| HF | 0.0075 lbs (8) MMBtu | 18 | NA | NA |
| **B-4 557.11 MMBTUH** | **Emissions Factor** | **Emissions (TPY)** | **Emissions Factor** | **Emissions (TPY)** |
| $PM_{10}$ | 0.0468 lbs (2) MMBtu | 114 | 7.6 lbs (1), MMCF | 18.18 |
| $NO_X$ | 0.7 lbs (3) MMBtu | 1708.1 | 190 lbs (1) MMCF | 454.54 |
| $SO_2$ | 1.2 lbs (3) MMBtu | 2,928.2 | 0.6 lbs (1) MMCF | 1.44 |
| VOC | 0.003 lbs (9) MMBtu | 7 | 5.5 lbs (1) MMCF | 13.16 |
| CO | 0.025 lbs(5) MMBtu | 61 | 84 lbs (1) MMCF | 200.95 |
| HCL | 0.022 lbs (6) MMBtu | 53.683 | NA | NA |
| $H_2SO_4$ | 0.0084lbs (10) MMBtu | 20.497 | NA | NA |
| HF | 0.0075 lbs (8) MMBtu | 18 | NA | NA |

(1) - AP-42, Table 1.4-2 (7/98).

(2) - PM factor based on BMACT limit of 0.04lb/MMBTU. This is a total filterable factor. The condensable portion of PM is 0.01 lb/MMBTU (AP-42, 7/98, Table 1.1-5, Footnote f). $PM_{10}$ and $PM_{2.5}$ factors are derived using Particle Size Distribution Factors in AP-42 (7/98) Table 1.1-6. (For $PM_{10}$: 0.04 lb/MMTBU * 92% for baghouse control = 0.0368 lb/MMBTU + 0.01 lb/MMBTU condensable for a total factor of 0.0468 lb/MMBTU).

(3) - Based on limits in NSPS subpart D; emission factor for $NO_X$: 0.7 lb/MMBTU; for $SO_2$: 1.2 lb/MMBTU

(4) - This emission is based on a January, 2003 stack test (EF of 0.075 lb/MMBTU). This value is used because it is higher than the AP-42 factor in Table 1.1-9. (B-2 to be removed 2017)

(5) - AP-42 (7/98) Table 1.1-3, EF of 0.5 lb/ton.

(6) - Based on BMACT EF of 0.022 lb/MMBTU.

(7) - This emission is based on a May, 2003 stack test (EF of 0.024 lb/MMBTU). This value is used because it is higher than the AP-42 factor in Table 1.1-15. (B-2 to be removed 2017)

(8) - AP-42 (7/98) Table 1.1-15, EF of 0.15 lb/ton. This is divided by 20 (Table 1.1-5, footnote e, sub-bituminous coal) to get an EF of 0.0075 lb/MMBTU.

(9) - AP-42 (7/98) Table 1.1-19, EF of 0.06 lb/ton. This is divided by 20 (Table 1.1-5, footnote e, sub-bituminous coal) to get an EF of 0.003 lb/MMBTU.

(10) - 0.7% of the $SO_2$ value, from AP-42 (7/98) Table 1.1-3, footnote b. NSPS D standard of 1.2 x 0.007 = 0.0084.

(11) - Emission factor of 0.1 lb $NO_X$/MMBTU, which is derived from 744 lb $NO_X$/day limit, per permit 2010-278-TVR (M-1) Condition 1.D.

| **B-5 415 MMBTUH** | **Emissions Factor** | **Emissions (lbs/hr)** | **Emissions (TPY)** |
|---|---|---|---|
| $PM_{10}$ | 0.0075 lbs (1) / MMBtu | 3.1 | 14 |
| $NO_X$ | 0.20 lbs (2) / MMBtu | 83 | 360 |
| $SO_2$ | 0.0006 lbs (1) / MMBtu | 0.2 | 1 |
| VOC | 0.0054 lbs (1) / MMBtu | 2.2 | 9.8 |
| CO | 0.05 lbs (3) / MMBtu | 20 | 90 |

(1) - Emission factors from AP-42, Chapter 1.4, Natural Gas Combustion, converted from lb/MMscf to lb/MMBtu using the AP-42-directed natural gas heating value of: 1,020 Btu/scf.

(2) - The emission factor is the applicable emission limit from NSPS Subpart Db at 40 CFR 60.44b(l)(1) and Oklahoma Rule 252:100-33-2(a)(1).

(3) - The emission factor is a vendor guaranteed value.

**EUG 1 - Emissions Summary**

| | **PM (TPY)** | **$NO_X$ (TPY)** | **$SO_2$ (TPY)** | **VOC (TPY)** | **CO (TPY)** | **HCL (TPY)** | **$H_2SO_4$ (TPY)** | **HF (TPY)** |
|---|---|---|---|---|---|---|---|---|
| **B-1** | 10 (2) | 135 (2) | 0.8 (2) | 7.3 (2) | 110 (2) | NA | NA | NA |
| **B-2** | 90.2 (1) | 1,350 (1) | 2,310 (1) | 140 (1) | 48 (1) | 42 (1) | 46.25 (1) | 14 (1) |
| **B-3** | 114 (1) | 1,708.1 (1) | 2,928.2 (1) | 7 (1) | 61 (1) | 53.683 (1) | 20.497 (1) | 18 (1) |
| **B-4** | 114 (1) | 1,708.1 (1) | 2,928.2 (1) | 13.16 (2) | 200.95 (2) | 53.683 (1) | 20.497 (1) | 18 (1) |
| **B-5** | 14 (2) | 360 (2) | 1 (2) | 9.8 (2) | 90 (2) | NA | NA | NA |
| **Total (3)** | **328.2** | **4,901.2** | **8,167.2** | **167.46** | **419.95** | **149.366** | **87.24** | **50** |
| **Total (4)** | **252** | **3,911.2** | **5,858.2** | **37.26** | **461.95** | **107.366** | **40.994** | **36** |

(1) – Coal fired emissions

(2) – Natural gas fired emissions

(3) – Totals for Boilers B-1, B-2, B-3, B-4

(4) – Totals for Boilers B-1, B-3, B-4, B-5

**EUG 2 – Combustion Sources Not Subject to NSPS or NESHAP**

| **EU ID** | **Rating (MMBtu/hr)** | **Firing Configuration** | **Controls** | **Fuels** |
|---|---|---|---|---|
| **PM-11** | 2 x 24 | NA | None | Gas/Propane |
| **PM-12** | 2 x 16.5 | NA | None | Gas/Propane |
| **PM-13** | 2 x 16.5 | NA | None | Gas/Propane |
| **PM-14** | 2 x 24 | NA | None | Gas |
| **PM-15** | 2 x 25 | NA | None | Gas |
| **PO-1 Press #1 Tunnel** | | NA | None | Gas |
| **PO-1 Press #2 Tunnel Dryer** | | NA | None | Gas |

| EU ID | Rating (MMBtu/hr) | Firing Configuration | Controls | Fuels |
|---|---|---|---|---|
| **PO-1 Press #3 Tunnel Dryer** | 4 x 3.2 | NA | None | Gas |
| **PO-1 Press #4 Tunnel Dryer** | | NA | None | Gas |
| **PO-1 Regenerative Thermal Oxidizer** | 9.6 | NA | NA | VOCs/Gas |

The replacement burners for the paper machines that were planned in the Mill Process Improvement Project were never installed. Increases in emissions to provide for the increased paper throughput authorized under Permit No. 99-113-C (M-4) PSD were accounted for in that permit based on additional steam demand for drying, the accompanying incremental increase of coal combustion in the boilers to obtain the additional heat for steam, and the efficiency of transferring that heat to the paper drying hoods. The basic deviation from the original emissions analysis for the paper machine hood burners in the original Title V permit that was addressed in Permit No. 99-113-C (M-4) was recognition of the new burners with higher ratings and emissions. However, since those burners were not installed, the original analysis from the Title V permit memorandum is still valid and therefore will not be changed in this memorandum, except that fuel oil can no longer be fired and is eliminated from this analysis. The memorandum for Permit No. 99-113-C (M-4) states that emission factors for natural gas represent the worst-case analysis when compared with propane. This was also stated in the Title V permit memorandum. Given that information, the same emissions used in the Title V permit for natural gas can be retained.

For the original Title V permit, the applicant submitted the emission calculations illustrated below for the paper machines, based on AP-42 emission factors as footnoted, burner ratings, and fuel heating values. Paper Machines PM-14 and PM-15 have permit limits that were established by permits existing prior to the original Title V permit. Permit No. 99-113-C (M-4) PSD would have established permit and BACT limits for all paper machines but since the new burners were not installed those limits are not required.

**EUG 2 – Combustion Sources Not Subject to NSPS or NESHAP**

| | Emissions Factor | Emissions (TPY) |
|---|---|---|
| **PM-11: 24 MMBTUH x 2** | | |
| PM | 7.6 lbs/MMCF [(1)] | 1.6 |
| $NO_X$ | 100 lbs/MMCF [(2)] | 20.6 |
| $SO_2$ | 0.6 lbs/MMCF [(1)] | 0.1 |
| VOC | 5.5 lbs/MMCF [(1)] | 1.1 |
| CO | 84 lbs/MMCF [(2)] | 17 |
| **PM-12: 16.5 MMBTUH x 2** | | |
| PM | 7.6 lbs/MMCF [(1)] | 1.1 |
| $NO_X$ | 100 lbs/MMCF [(2)] | 14.2 |
| $SO_2$ | 0.6 lbs/MMCF [(1)] | 0.09 |
| VOC | 5.5 lbs/MMCF [(1)] | 0.78 |
| CO | 84 lbs/MMCF [(2)] | 12 |

| | Emissions Factor | Emissions (TPY) |
|---|---|---|
| **PM-13: 16.5 MMBTUH x 2** | | |
| PM | 7.6 lbs/MMCF (1) | 1.1 |
| $NO_X$ | 100 lbs/MMCF (2) | 14.2 |
| $SO_2$ | 0.6 lbs/MMCF (1) | 0.09 |
| VOC | 5.5 lbs/MMCF M(1) | 0.78 |
| CO | 84 lbs/MMCF (2) | 12 |
| **PM-14: 24 MMBTUH x 2** | | |
| PM | 7.6 lbs/MMCF (1) | 1.6 |
| $NO_X$ | 100 lbs/MMCF (2) | 20.6 |
| $SO_2$ | 0.6 lbs/MMCF (1) | 0.1 |
| VOC | 5.5 lbs/MMCF (1) | 1.1 |
| CO | 84 lbs/MMCF (2) | 17 |
| **PM-15: 25 MMBTUH x 2** | | |
| PM | 7.6 lbs/MMCF (1) | 1.6 |
| $NO_X$ | 100 lbs/MMCF (2) | 21.5 |
| $SO_2$ | 0.6 lbs/MMCF (1) | 0.1 |
| VOC | 5.5 lbs/MMCF (1) | 1.2 |
| CO | 84 lbs/MMCF (2) | 18 |

(1) - AP-42, Table 1.4-2 (7/98);
(2) - AP-42, Table 1.4-1 (7/98)

**EUG 2 – Emissions Summary**

| | $PM_{10}$ (TPY) | $NO_X$ (TPY) | $SO_2$ (TPY) | VOC (TPY) | CO (TPY) |
|---|---|---|---|---|---|
| **PM-11** | 1.6 | 20.6 | 0.1 | 1.1 | 17 |
| **PM-12** | 1.1 | 14.2 | 0.09 | 0.78 | 12 |
| **PM-13** | 1.1 | 14.2 | 0.09 | 0.78 | 12 |
| **PM-14** | 1.6 | 20.6 | 0.1 | 1.1 | 17 |
| **PM-15** | 1.6 | 21.5 | 0.1 | 1.2 | 18 |
| **PO-1 Dryer #1 – 3.2 MMBTUH** | 0.10 | 1.37 | 0.008 | 0.076 (1) | 1.2 |
| **PO-1 Dryer #2 – 3.2 MMBTUH** | 0.10 | 1.37 | 0.008 | 0.076 (1) | 1.2 |
| **PO-1 Dryer #3 – 3.2 MMBTUH** | 0.10 | 1.37 | 0.008 | 0.076 (1) | 1.2 |
| **PO-1 Dryer #4 – 3.2 MMBTUH** | 0.10 | 1.37 | 0.008 | 0.076 (1) | 1.2 |
| **PO-1 Regenerative Thermal Oxidizer** | 0.31 | 4.21 | 0.02 | 0.23 (1) | 3.5 |
| **Totals** | **7.71** | **100.79** | **0.532** | **5.494** | **84.3** |

(1) – Emission from combustion source prior to the regenerative thermal oxidizer.

Emission calculations for the existing tunnel dryer at the polyethylene printer and for the three new dryers installed under the Mill Process Improvement Project are based on factors from Tables 1.4-1 and 2 of AP-42 (7/98).

The regenerative thermal oxidizer was evaluated in permit No. 99-113-C (M-4) PSD using a heat input rating of 9.6 MMBTUH and the same emissions factors as were used in the previous permit for the replaced catalytic oxidizer, except for $NO_X$. The manufacturer supplied a $NO_X$ emission factor based on PTE, expected emission rate with no VOC present, and expected rate

with VOC present. The RTO is estimated to be more than 95% efficient, although 95% will be used as a conservative number for this discussion. Annual totals are listed in the following table. Hourly rates may be calculated by dividing each number by 8,760 hours per year.

| | Combustion Emissions (TPY) | | | | |
|---|---|---|---|---|---|
| Regenerative Thermal Oxidizer 9.6 MMBTUH | $SO_2$ | $PM_{10}$ | VOC | $NO_X$ | CO |
| | 0.02 | 0.31 | 0.23 | 4.21 | 3.5 |

VOC emissions from polyethylene printing depend on capture and destruction efficiency. The enclosure constructed as part of the Mill Process Improvement Project is deemed to provide 100% capture efficiency for the four printers. Assuming conservatively low destruction efficiency of 95% for the thermal oxidizer and using potential printer VOC emissions of 971 TPY leads to zero fugitive emissions and 48.6 TPY of stack emissions. The following table summarizes these calculations. As will be discussed in a later section, testing on January 10, 2007 illustrated an efficiency of 98.8%.

**Oxidizer Emissions From Printer VOC (TPY)**

| Unit(s) | Uncontrolled VOC | Fugitive | Stack | Total |
|---|---|---|---|---|
| Regenerative Thermal Oxidizer, 4 Printers | 971 | 0 | 48.6 | 48.6 |

**EUG 3 – Coal Preparation Plant**

The applicant submitted the following methodology for calculating emissions from the coal handling processes. Regulatory standards are limited to opacity standards. There were no limits placed on this EUG in the permit.

To calculate emissions for operations from railcar unloading to the grizzly feeder, an emission factor from AP-42, 13.2.4 Aggregate Handling and Storage Piles, was used from the Mineral Products Industry category. This factor includes both batch and continuous drop operations, both of which are utilized for this coal preparation plant. It includes dust emissions from several distinct source activities within the storage cycle:

1. Loading of aggregate onto storage piles (batch or continuous drop operations).
2. Equipment traffic in storage area.
3. Wind erosion of pile surfaces and ground areas around piles.
4. Load-out of aggregate for shipment or for return to the process stream (batch or continuous drop operations).

Emissions from railcar unloading, the radial stacker, and filling the grizzly feeder with the front-end loader were calculated with the use of this emission factor. Inherent to the emission factor derivation and resulting emission calculations for this methodology are coal pile emissions. The results of the calculations for the emission units in this EUG are illustrated by the following methodology and summarized in the table below.

From AP-42, Section 13.2.4: $E\ (lbs/ton) = k*0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$
where: $k = 0.35$ for $PM_{10}$

U = wind speed (15 mph, worst case value from Ranges of Source Conditions)
M = moisture content (0.25 %, worst case value from Ranges of Source Conditions)

Applying the above factors, E = 0.0859 lbs PM/ton of coal.

Coal handling factors for crushing and conveying were taken from "Compilation of Past Practices and Interpretations by EPA Region VIII on Air Quality Review of Surface Mining Operations." These factors are also consistent with those used in an Oklahoma power plant Title V permit. A factor of 0.2 lbs PM/ton of coal was used for crushing, and a factor of 0.02 lbs PM/ton coal was used both for conveying and the conveying/filling process into the bunkers. No factors were compiled for the coal feeders or the pulverizers. These are closed processes, and are expected to have no visible emissions. However, they are subject to a 20% opacity limit by regulation.

Applying the above emission factors to a throughput of 519,362 tons of coal in 2003, the applicant estimated actual emissions as shown in the following table. Generally, sub-bituminous coal would have a heat value content of more than 8,300 Btu/lb and less than 11,500 Btu/lb. Using the low value and the total combined heat input rating of Boilers B-2, B-3, and B-4, operating on a continuous schedule, coal consumption should not exceed 820,178 TPY. The PTE shown in the table is based on a throughput of 820,200.

**EUG 3 –Coal Preparation Plant**

<table>
<tr><th rowspan="2">EU Name</th><th rowspan="2">Particulate Matter Emission Factors (lbs/ton coal)</th><th rowspan="2">Throughput (TPY)</th><th colspan="2">PM Emissions (TPY)</th></tr>
<tr><th>2003 Actual</th><th>PTE</th></tr>
<tr><td>Railcar Unloading</td><td rowspan="3">0.0859</td><td rowspan="3">519,362</td><td rowspan="3">22.31</td><td rowspan="3">35.23</td></tr>
<tr><td>Radial Stacker</td></tr>
<tr><td>Grizzly Feeder</td></tr>
<tr><td>Coal Sizer/Crusher</td><td>0.2</td><td>519,362</td><td>51.94</td><td>82.03</td></tr>
<tr><td>Conveying</td><td>0.02</td><td>519,362</td><td>5.19</td><td>8.20</td></tr>
<tr><td>Coal Bunkers</td><td>0.02</td><td>519,362</td><td>5.19</td><td>8.20</td></tr>
<tr><td>Coal Feeders</td><td colspan="4" rowspan="2">Closed Process<br>No Emissions</td></tr>
<tr><td>Pulverizers</td></tr>
</table>

Concerning the building housing the coal sizer/crusher, there are openings on two sides of the building for the ingoing and outgoing conveyors. Except for the outlet chute opening to the conveyor, the Sizer/Crusher is enclosed. Based on this and visual observation, the applicant feels that Sizer/Crusher emissions are probably less than Unloading/Stacker/Feeder emissions, probably because of the enclosure but was not able to find a more representative published factor. The only limit placed in the permit at this time by AQD is opacity.

**FS-1 Emissions - Title V application**

As stated in Appendix E of the original application, emission unit FS-1 is known as fuel storage. As noted above in the discussion for the plant-wide emission calculations, coal pile emissions were included in those calculations. Coal pile emissions, FS-1, were calculated and submitted in

the original permit application. Solid fuels that will be used in the boilers are stored in outdoor storage piles at the mill site. FS-1 pertains to the particulate emissions resulting from pile building, wind erosion, and pile breakdown. Based on information from a 1984 report by the Electric Power Research Institute, CS 3455, the following calculation was used to determine emissions from the coal pile:

E = 1.9(S/1.5)[(365-P)/235)](f/15)

where:

E = emission factor (Kg per hectare per day)
S = silt content of aggregate (%)
P = number of days with > 0.25 mm of precipitate per year.

f = percentage of time that the unobstructed wind speeds exceeds 5.4 m/s at the mean pile height.

for Muskogee:

S = 2.2 (AP-42 table 11.2, 3.1)
P = 90 (AP-42 figure 11.2,1-1)
f = 39 from the 1988 Windrose for Tulsa, OK (1 knot = .5 m/s)

As a result, for every hectare of coal stored, the following was used to determine the coal dust emissions.

Kg/hectare-day = 1.9(2.2/1.5)[(365-90)/235](39/15) = 8.5

The approximate square footage of the coal pile is 465,000 $ft^2$.

Converting coal pile square footage to hectares = 465,000 $ft^2$ (0.00000929 hectare/$ft^2$) = 4.319 hectares

Substituting 8.5/hectare-day (4.319 hectares) = 36.7115 kg/day

Consequently, 36.7115 kg/day (365 days/yr)(1,000 g/kg)(1 lb/454 g) ton/2,000 lbs = 14.76 tons/yr.

| **EU ID** | **Emissions Factor (kg/hectare-day)** | **Throughput (hectares)** | **Control Efficiency** | **PM Emissions (TPY)** |
|---|---|---|---|---|
| FS-1 | 8.5 | 4.319 | None | 14.76 |

**EUG 4 – PP-1 Pulp Processing Units**

This EUG is reserved for future Subpart S applicable units. HAP emission calculations are included in EUG 6 – VOC Sources Not Subject to an NSPS or NESHAP.

**EUG 5 – Subpart KK Flexographic Printing**

**Printing Presses**
Emissions of HAPS are limited by Subpart KK to 400 kilograms per month. In addition to restrictions on HAP emissions, these units have a large amount of VOC emissions. Non-HAP emissions may become subject to the requirements of OAC 252:100-42. VOC emissions for the printers, not subject to an NSPS or NESHAP, are illustrated in the discussion of emissions for EUG 6 and are not repeated here.

**EUG 6 – VOC Sources**

OAC 252:100-41 was replaced by OAC 252:100-42, a far less restrictive rule as applied to this facility and, since there are no designated areas of concern at this time, there are no requirements under OAC 252:100-42.

**EUG 6 – VOC Sources**

| EU ID | EU Name | Manufacturer/Model/Serial # | Construct Date |
|---|---|---|---|
| PP-1 | Pulp Processing Units | Components listed in Section III | 1977-1992 |
| PM-11 | Paper Machine #11 | KMW | 1975 |
| PM-12 | Paper Machine #12 | KMW | 1975 |
| PM-13 | Paper Machine #13 | KMW | 1979 |
| PM-14 | Paper Machine #14 | Beloit | 1981 |
| PM-15 | Paper Machine #15 | Beloit | 1992 |
| | Paper Machine Additives | NA | |
| SC-1 | Solvent Cleaning<br>PM-11, PM-12, PM-13, PM-14 | NA | 1975 |
| PM-15 | Solvent Cleaning | NA | 1992 |
| PO-1 | Flexo-plate making | Anderson-Vreeland | June, 1984 |
| | Flexographic Polyethylene Printer | Paper Converting Machine Company (PCMC), Model No. 6795, 6-color w/vapor collection hood and tunnel dryer | June, 1984 |
| FP-1 | Flexographic Paper Printers (two) | Flexo 31-005 – PCMC/Model No. 6992<br>Flexo 31-008 – PCMC/Model No. 7416 | 1990<br>1993 |
| FP-8 | Flexographic Polyethylene Printer | Bretting, 4-color, 78-inch wide | June, 2005 |

**PP-1 Pulp Processing Units**

Emission factors for these units were developed by the applicant from a comprehensive emissions testing program by The National Council for Air and Stream Improvement (NCASI). A detailed discussion from the original Title V permit is included herewith an update for the

increased throughput permitted under the Mill Process Improvement Project. The emissions factor is 0.45 lbs-VOC/ton-pulp. The following table uses this factor to illustrate the resulting PTE.

| **Paper production (TPY)** | | **Pulp use (TPY)** | | **Emission factor** | **VOC Emissions (TPY)** | | |
|---|---|---|---|---|---|---|---|
| | **Potential** | | **Potential** | **Lb/ton** | | **Potential** | |
| | 538,845 | | 567,205 | 0.45 | | 128 | |

Emissions were measured from Pulping System by The National Council for Air and Stream Improvement (NCASI) and overall emission factors developed for each pollutant emitted from the systems. The following discussion of the derivation of emissions was taken from the applicant's submittal dated May 24, 2004, in response to AQD's Notice Of Deficiency dated May 10, 2004, with some editorial changes by AQD:

Fort James Operating Company's Muskogee Mill (now Georgia-Pacific Consumer Products LP) was selected by NCASI and the forest products industry leadership to participate in a comprehensive emission testing program. NCASI is the primary research arm of the pulp and paper industry and worked closely with the United States Environmental Protection Agency ("USEPA") to develop a sampling program to gather information on emissions of Hazardous Air Pollutants ("HAPs") that would support the development of Maximum Achievable Control Technology ("MACT") standards for, in addition to others, recycled fiber pulping and de-inking mills. As a side note concerning HAPs, each HAP that was originally analyzed in this discussion, except for limonene which was detected only at trace levels (0.009 lbs/hr), was also an Oklahoma Department of Environmental Quality (ODEQ) Toxic Air Contaminant (TAC). At the time of the study, an extensive list of state-regulated toxic air contaminants (TACs) was in effect under Part 5 of OAC 252:100-41 (Subchapter 41). Subsequent to public notice of the draft permit, during which comments from the applicant were under consideration, Part 5 of Subchapter 41 was superseded by OAC 252:100-42, which became permanently effective on June 15, 2006. Therefore this discussion is more pertinent now to HAPs.
The primary goal of the program was to characterize the emissions of volatile organic HAPs from various processes to determine if these emissions could be related to key process variables. A secondary goal was to obtain emissions data that could be used to prepare Title V operating permit applications and to improve the accuracy of annual release estimates required by SARA 313.

Initiated in 1994, the sampling program consisted of two phases. In phase I, approximately 140 process liquid samples were collected from 33 mills. Based on industry experience and working closely with USEPA, NCASI developed a list of nearly 100 HAP compounds that the liquid samples would be analyzed for, with a target detection limit of 1 mg/L. The results from the analysis of these samples and information collected about the process units were then used as a basis for selection of eleven mills at which full-scale studies were conducted. The eleven mills were selected on the three principles below, and FJOC met each of the criteria.

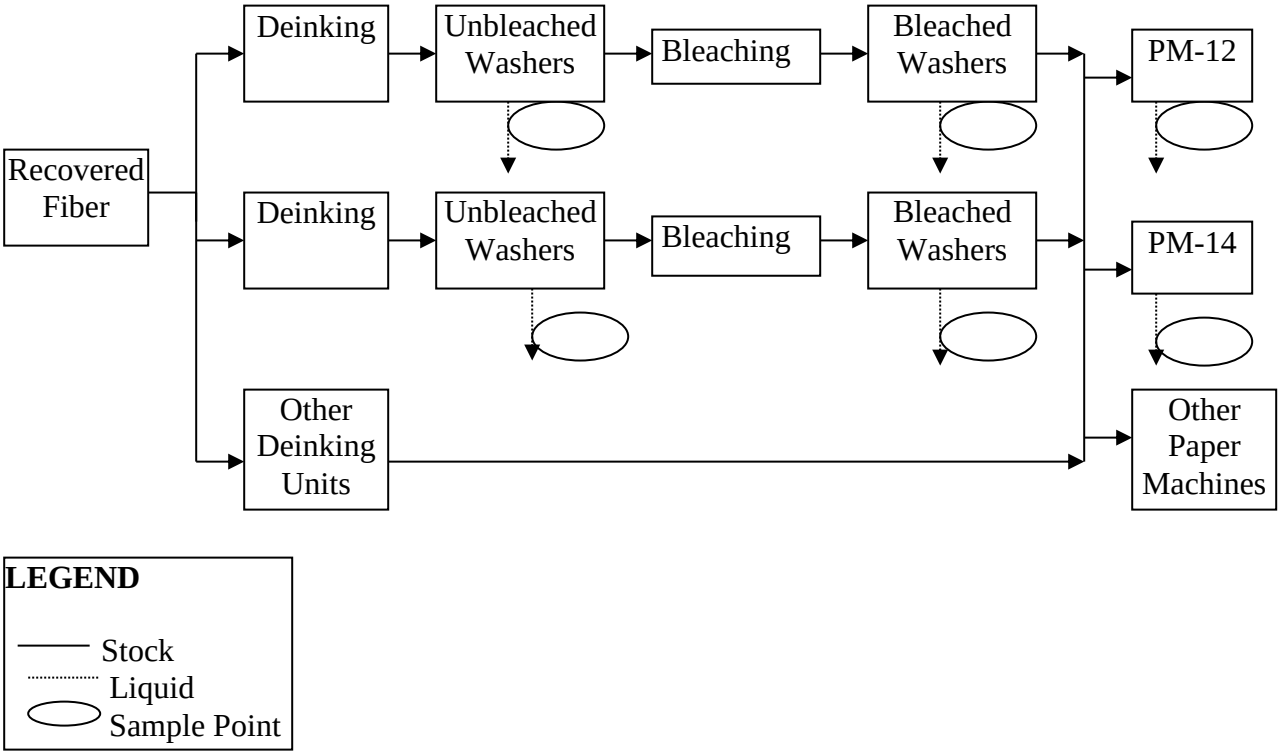
1. The selected mills and process units were to be representative of similar facilities in the industry. Since one of the goals of phase I was the identification of compounds that had a

reasonable likelihood of being detected in process vent gases, it was necessary to collect samples from mills that used processes and additives that were typical of the industry.

2. The facilities chosen were to include processes targeted by USEPA in 1994 for potential MACT III regulations, which included de-inking.
3. For each targeted mill process, major variables possibly affecting emissions were to be considered. Within recovered fiber pulping, de-inked and non-de-inked pulping were included. Within the category of paper production, recovered fiber tissue and towel were included.

PHASE I

In phase I, the following six process liquid samples were collected for the screening study analysis at the pulp processing facility: Test Area 1 unbleached washer filtrate, bleached washer filtrate, Test Area 2 unbleached washer filtrate, bleached washer filtrate, Paper Machine No. 12's (PM-12) white water, and Paper Machine No. 14's (PM-14) white water. The screening liquid sample points can be located on the following simplified flow diagram.



PHASE II

Emissions from process vents were measured from the Pulp Processing Test Area 1 by NCASI. Emission measurements were taken at the Unbleached Disc Thickener Vent, the Unbleached Washers, the Bleached Washers, the Flotation Cell Vacuum System Device Vent No. 2, and the Stock Blend Tank Vent. Test Area 2 were taken at the No. 1 Bleach Tower Vent, the Pressurized Deinking Modules Rejects Vent, the Unbleached Press Vent No. 1, the No. 2 Bleach Tower Vent, and the Thickener Vent.

There were generally three stack test results on each source that were averaged according to prescribed calculation protocols (note however that, if for a source, all the runs for a compound gave emission rates below the detection limit, the average emission would be reported as ND (not detected) at the detection limit). The vent gas concentrations were multiplied by the measured vent gas flow rates to determine the source emission rates (lb/hr). The mass emission rates for individual compounds were calculated by using the molecular weights of the specific compound. The calculated emission rates were then normalized by dividing the emission rate by the System production/throughput rate in short tons (T) to obtain the final results (lb/T).

Using the distributive property of mathematics, the emission rates for each source can be added together then multiplied by the system production rate yielding the same value as each emission rate being multiplied by the system production rate individually. Using Test Area 1 for example:

(#01)x + (#2D)x + (#4B)x + (#05)x + (#06)x = x (#01 + #2D + #4B + #05 + #06)

where x is the system production rate at the time of testing.

NCASI generally states in its report that, in some cases, not all of the vents from a process unit were tested. The emissions for untested vents were estimated from similar tested vents. For example, if there were three roof vents, and only one of those vents was tested, and using a production rate of 300 tons per day (TPD) during the testing, then 100 TPD was used in the emission calculation for the one tested vent to account for the emissions from the other two similar vents.

The Pulp Processing emission factors were used to estimate total TAC/HAP/VOC emissions for all pulping systems. This is reasonable since all systems use similar processes and raw materials to produce similar products. This approach should provide the best available emission estimates for any existing system. Each System in Pulp Processing uses the same recovered fiber stock, and virtually the same additives and equipment to produce the same product. That is to say, each system uses a similar raw material and a similar process to produce a similar product. This assumption and methodology is somewhat analogous to using an AP-42 emission factor for a category of gas boilers that are similar in heat input rating, size and design.

The primary difference in the Systems lies in the bleaching agent and/or sequence. Emission factors for the systems were developed by applying the production rate-normalized emission factors from the two areas tested.

During the year 2004, the mill has been using the same bleaching agents except that more of one bleaching agent with an additive was used whereas less of another bleaching agent was used.

According to the manufacturers of the additive, bleaching emissions would be similar. "Although there are some differences in the mode of chemical attack, the byproducts, such as methanol, acetic acid, and quinone structures, are associated with both bleaching species." The applicant therefore believes that emissions using the new additive are similar to emissions prior to using the additive.

The discussion above summarized how HAP emission factors for two types of bleaching were tested by NCASI. When the emission factors were selected to estimate potential-to-emit (PTE) emissions for the mill's Title V application, the higher factors were selected and applied to the maximum expected production rates for the pulping system. This method more-than-likely over estimates emissions, but is the most conservative method, and would in essence allow a safety margin to bleach with either type of bleach, yet have the most conservative PTE already estimated. The air modeling for toxics was performed at these conservative emission estimates.

The PTE for all the Pulp Processing is estimated in the table below. This is also the table submitted (in its latest revision) for the Title V permit application, and was the basis for establishing a permit limit.

**PP-1 Pulp Processing Emissions Units**

| **HAPs** | **CAS #** | **Emissions** TPY | **Emissions** lbs/hr |
|---|---|---|---|
| 1,2-dimethoxyethane | 110714 | 0.05 | 0.01 |
| Acetaldehyde | 75070 | 12.16 | 2.78 |
| Biphenyl | 92524 | 20.09 | 4.59 |
| Chloroform | 67663 | 39.61 | 9.04 |
| Formaldehyde | 50000 | 0.00 | 0.00 |
| Methanol | 67561 | 33.95 | 7.75 |
| Methyl ethyl ketone | 78933 | 0.57 | 0.13 |
| Methylene chloride | 74873 | 0.00 | 0.00 |
| Naphthalene | 91203 | 0.54 | 0.12 |
| Phenol | 108952 | 2.04 | 0.47 |
| Propionaldehyde | 123386 | 0.26 | 0.06 |
| Toluene | 108883 | 13.86 | 3.16 |

Note: Limonene was deleted from this table. It was detected only at trace levels.

For the permit, the following combined emission factor was developed.

$$\text{Emission Factor} = \frac{\sum \text{VOC Constituents}}{\text{Total Pulp Process Rate}} = \frac{28.11 \text{ lbs/hr}}{64.59 \text{ TPH}} = 0.44 \text{ lbs/ton}$$

The permitted factor is 0.45 lbs/ton.

**Paper Machines PM-11, PM-12, PM-13, PM-14, and PM-15**

The methodology that was used in calculating emission factors for the paper machines presented in the public draft permit has been abandoned in favor of a mass balance based on the solvent

content of additives used in the paper machines. This methodology is detailed in the following section titled "Paper Machine Additives."

**Paper Machine Additives**

VOC emissions are generated primarily from paper enhancement chemicals such as softness aids, dyes, biocides, etc. The applicant believes that the primary driving force of VOC emissions generated from the paper making process is a result of VOC evaporation from VOC-containing additives introduced in the paper making machines. The method for calculating VOC emissions from Paper Machine Additives is calculated from the VOC-containing Paper Machine chemicals. The basis for the emissions calculation is a mass balance using the summation of the estimated VOCs emitted from additives. Therefore, VOC emission calculations are based on VOC concentrations and throughput of each chemical. A 100% release factor is applied in the same way as demonstrated for paper machine solvent emissions in SC-1.

Permit No. 99-113-C (M-4) PSD increased the limit for the Mill Process Improvement Project which anticipated increased throughput. In evaluating limits for that permit, the applicant reviewed all chemical use in terms of VOC content for baseline years 2002 and 2003. An emissions factor was derived using the quotient of the VOC totals and paper production for those years, inflated by nearly 50% to provide a contingency for variations of VOC that may occur in additive formulations that may become available. The first table following shows the data used in calculating the emissions factor and the second table shows the resulting increase in VOC emissions based on the proposed expansion project.

| | **VOC Usage (TPY)** | | |
|---|---|---|---|
| **Additive** | **2002** | **2003** | **Maximum 2002/2003** |
| Wet Strength | 30.63 | 50.22 | 50.22 |
| Softeners | 4.67 | 1.76 | 4.67 |
| Release Agents | 0.26 | 0.44 | 0.44 |
| Miscellaneous | 10.11 | 7.03 | 10.11 |
| Felt/Wire Conditioners | 6.79 | 6.90 | 6.90 |
| Defoamers | 8.73 | 6.11 | 8.73 |
| Biocides | 0 | 9.94 | 9.94 |
| Paper Machine Dyes | 0.19 | 0.18 | 0.19 |
| **Total** | **61.39** | **82.58** | **91.21** |
| ADT/yr* | 342,202 | 349,558 | 345,880** |
| Lb VOC/ton paper | 0.359 | 0.472 | 0.527 |

*Paper production in air-dried tons per year

**Two-year average ADT

| **Production (ADT)** | | **Emission factor** | **VOC Emissions (TPY)** | | |
|---|---|---|---|---|---|
| **2002-2003 Average** | **Potential** | **Lb/ADT** | **2002-2003** | **PTE** | **Increase** |
| 345,880 | 538,845 | 0.75 | 72.0* | 202 | 130 |

*Average of actuals.

**Solvent Cleaning of Paper Machines**

Emissions of VOCs from SC-1, solvent cleaning, are based on the use of a 100% VOC solvent to clean Paper Machine wires. This solvent is applied through spray nozzles located across a boom that stretches across the Paper Machine. In evaluating limits for Permit No. 99-113-C (M-4) PSD, the applicant reviewed actual solvent use for 2002-2003, compared it with paper production for each of the two years, and the most-polluting ratio was taken to represent future production. The first table following shows the data used to calculate the ratio and the second table shows the effect of using the ratio in calculating emission changes due to the Mill Process Improvement Project. Note that this approach assumes that all of the VOC is emitted, making recordkeeping much simpler, and assuring conservatively high calculations. It also combines the emissions and conditions for SC-1 (PM-11, 12, 13, and 14) with those for PM-15 into a single set of requirements.

| | **2002** | **2003** |
|---|---|---|
| Solvent use | 500 tons | 414 tons |
| ADT* | 342,202 | 349,558 |
| Lbs of VOC/ADT | 2.92 | 2.37 |

*Paper production in air-dried tons.

| **Production (ADT)** | | **Emission factor** | **VOC Emissions (TPY)** | | |
|---|---|---|---|---|---|
| 2002-2003 Average | Potential | Lb/ADT | 2002-2003 | PTE | Increase |
| 345,880 | 538,845 | 2.92 | 505* | 787 | 282 |

*Note that this is not the figure reported as actual for inventory purposes. It represents the emissions that would have been reported had the derived emission factor been used.

Since HAP are required to be speciated for annual emission inventory purposes, and since enumeration of various HAP will not alter the status of this permit, no attempt is made here to analyze the individual components of the solvents, or to establish anticipated quantities of each that may be emitted.

**Plate Making**

Emissions are small because almost all of the used solvent is recycled at the Poly Plant. Previous review of actual use for a single press suggests that 900 lbs of VOC per year is a reasonable number. Adding three more presses will not multiply the emissions by four, because the plates made may be used interchangeably among the presses. Despite that fact, the facility has opted to make the conservatively high assumption that emissions will be 900 × 4 = 3,600 lbs/yr (1.8 TPY). Because the source is insignificant, the emissions number is rounded to 5.0 TPY.

**Polyethylene PO-1 Flexographic Printers**

Permit No. 99-113-C (M-4) authorized additional Flexographic Printer # 2, #3, and #4. The enclosure around all four units is rated at 100% capture efficiency. Assuming conservatively low destruction efficiency of 95% and using potential printer VOC emissions of 971 TPY leads to zero fugitive emissions and 48.6 TPY of stack emissions. The following table summarized these calculations.

**Oxidizer Emissions From Printer VOC (TPY)**

| **Unit(s)** | **Uncontrolled VOC** | **Fugitive** | **Stack** | **Total** |
|---|---|---|---|---|
| Catalytic Oxidizer & 1 Printer | 197.5 | 59.3 | 1.9 | 61.2 |

| Unit(s) | Uncontrolled VOC | Fugitive | Stack | Total |
|---|---|---|---|---|
| RTO & 4 Printers | 971 | 0 | 48.6 | 48.6 |
| Change | 774 | -59.3 | 46.7 | -12.6 |

The Mill Process Improvement Project under Permit No. 99-113-C (M-4) PSD increased actual paper production but not to exceed the amount of paper already authorized. Thus, the existing 92.28 TPY of VOC authorized by existing permits was not to be increased by the Mill Process Improvement Project. At the time the VOC level was authorized, average VOC concentration in water-based inks ranged from approximately 6% to 8%. A conservatively high 10% was used to calculate a PTE and to allow for flexibility in varying ink VOC concentrations. The data used imply use of 0.343 pounds of VOC per ton of paper. Actual use figures for 2002 and 2003 indicate that calculations supporting the 92 TPY level greatly exaggerated the VOC concentration, in that 2002 use was approximately 0.018 lbs/ton and 2003 use was approximately 0.031 lbs/ton. Two calculation methods were utilized to evaluate the increase in emissions. Both were based on actual-to-potential method. The first calculation method assumes that the potential printing volume (538,845 tons printed paper) can emit VOC at the original estimated rate of 0.031 lbs/ton. The second calculation method assumes that the baseline volume (345,965 tons printed paper) will continue to emit at the actual level of 0.018 lb/ton while the incremental volume increase (192,965 tons printed paper) will emit at the higher rate of 0.031 lb/ton. The analysis of emissions increases from both methods use actual emissions from baseline years of 2002 and 2003. Although it was thought that the second option was more realistic, the first option was required for the PSD analysis.

**Paper Printer VOC Emissions (TPY)**

| **Potential Emissions** | **92.28** | **37.31** |
|---|---|---|
| 2002-2003 Actual Average | 4.26 | 4.26 |
| Increase | 88.02 | 33.05 |

**EUG 7 – Non-Combustion PM Sources Not Subject to NSPS or NESHAP**

**Paper Machines**

Paper fibers are released into the atmosphere via the drying, trimming, handling and slitting of the paper sheet. Particulate matter emission limits were calculated using stack test data from a sister mill in Rincon, Georgia. Results from the 2002 stack testing of Rincon's #19 Paper Machine drying hood indicated 0.465 lbs/hr of particulate matter generated, of which, 0.415 lbs/hr was not due to burning natural gas. Dividing this number by the paper production rate yielded an emission factor of 0.048 lb-PM/ton-paper. The derived emission factor was doubled to account for particulate matter emissions generated by the wet end of the paper machine, which is a conservatively high assumption, resulting in 0.096 lb-PM/ton-paper. Stack test data (November 2001) from the roof vents in the building above Rincon's #19 paper machine showed 0.875 lbs/hr of particulate matter. This factor was also converted to 0.108 lb-PM/ton-paper produced. It should be noted that emissions measured from the Rincon, Georgia Plant were reported in units of mass per unit volume. Paper throughput was not reported in the test report. Relating the emissions to throughput as an emission factor is a relationship assumed by the applicant in their estimation of emissions.

The two factors were then summed for an overall combined factor. Using this combined emission factor for Muskogee's paper machines, an estimate of particulate emissions from the processes described above and from the roof vents was calculated based upon estimated paper production used in the potential-to-emit calculations in the original Title V permit, resulting in total emissions as illustrated in the table below.

Permit No. 99-113-C (M-12) authorized the installation of the PM-15 "Winder Section Dust Collection and Control System" with the general objectives of improving indoor air quality and minimizing dust (particulate matter/PM) accumulation and entrainment in paper rolls. PM-15 had an existing limit of 10.29 TPY for the entire Paper Machine PM-15 process, which applied whether or not the "Reel Section Dust Collection System" is in operation. Additional PM emissions of 9.82 TPY ($PM/PM_{10}/PM_{2.5}$) were authorized for PM-15 under Permit No. 99-113-C (M-12). In justifying the new additional limits, GP obtained stack test data for a similar scrubber at the Rincon facility that indicate controlled emissions off the new scrubber for the Muskogee facility will be approximately 7.01 tons per year (1.6 lbs/hr) of total PM. Due to uncertainties described in the memorandum of Permit No. 99-113-C (M-12), Georgia-Pacific requested an enforceable limit of 9.82 TPY $PM/PM_{10}/PM_{2.5}$ for the Winder Section Dust Collection and Control System to avoid PSD applicability which they believed would provide a margin of compliance. On November 19, 2014, uncontrolled emissions were tested to be 17.7 TPY and controlled emissions were tested to be 2.2 TPY. The existing limit of 10.29 $PM_{10}$ tons per year for the PM-15 building vents and the Reel Section Dust Collection System will remain in effect.

| **Machine** | **Paper Throughput (TPY)** | **PM Emissions (TPY)** |
|---|---|---|
| PM-11 | 91,250 | 9.31 |
| PM-12 | 127,750 | 13.03 |
| PM-13 | 109,500 | 11.17 |
| PM-14 | 109,500 | 11.17 |
| PM-15 Building Vents and Reel Section Dust Collection System | 100,845* | 10.29 |
| PM-15 Winder Section Dust Collection and Control System | 100,845* | 9.82 |
| **Total** | 538,845 | 64.79 |

* These throughputs are not additive.

**PM-15 Dust Collection System**

Paper machine PM-15 is equipped with dust collection systems that are specifically designed to reduce dust inside the paper machine building. Reducing the dust in the paper machine building allows the employees to work in the area without the use of a respirator, which could otherwise be required by OSHA due to employee exposure limits. The Reel Section Dust Collection System and the Winder Section Dust Collection and Control System utilize wet scrubbers to filter collected dust prior to discharge. As previously noted, the PM emissions listed above for the PM-15 Reel Section Dust Collection System are potential emissions without this collection system operating. Since emissions for this system are permitted at potential levels, previous permit memorandums stated that no monitoring or recordkeeping would be required for this

collection system. However, since uncontrolled emissions from the Winder Section Dust Collection and Control System would be above the significance level as confirmed by testing, monitoring and maintenance conditions are appropriate for that system scrubber.

**EUG 8 - Emergency Engines DG-1, DG-2, DFP-1**

Emissions for the emergency engines were calculated using emissions factors from AP-42 Table 3.4-1 for DG-1 and DG-2, and AP-42 Table 3.3-1 for DFP-1.

| | $NO_X$ | CO | VOC | $PM_{10}$ | $SO_2$ |
|---|---|---|---|---|---|
| DG-1 (at 720 hours annual operation) | 4.72 | 1.25 | 0.12 | 0.15 | 0.52 |
| DG-2 (at 720 hours annual operation) | 4.72 | 1.25 | 0.12 | 0.15 | 0.52 |
| DFP-1 (at 500 hours annual operation) | 1.86 | 0.40 | 0.15 | 0.13 | 0.12 |

## SECTION V. PSD REVIEW

**Existing PSD (Prevention Of Significant Deterioration) Permits**

Three PSD permits and evaluations have been issued during the life of this plant. PSD/Modeling/BACT evaluation was performed for Permit No. PSD-OK-404. A PSD analysis performed for Permit No. 83-062-O PSD addressed VOC emissions from the PO-1 Plant (flexographic printing and platemaking). A full PSD evaluation was performed for the Mill Process Improvement Project under Permit No. 99-113-C (M-3) (PSD). Details for the analyses can be found in the memoranda of those permits. Note that Permit No. 99-113-C (M-4) (PSD) was issued for minor revisions to Permit No. 99-113-C (M-3) (PSD).

OAC 252:100-8-30(b) outlines a two-step analysis to determine whether a PSD significant increase in emissions has occurred, i.e. calculating 1) whether a significant emissions increase will occur and if so, then 2) whether a significant net emissions increase will occur. The project to replace Boiler B-2 with B-5 and to install a DSI System on Boilers B-3 and B-4 involves both new emissions units and modification to existing emissions units. In evaluating the DSI System installation, emissions increases resulting from the potential increased utilization and/or other factors related to the project that could increase emissions from the existing boilers must be considered. Georgia-Pacific chooses the Hybrid test for projects that involve multiple types of emissions units required under 252:100-8-30(b)(5). EPA Region III's April 20, 2010 letter concerning the Northampton Generating Company provides guidance on the procedure to account for excludable emissions when using projected actual emissions. DEQ required G-P to provide sufficient information to apply this five-step procedure and it is included later in this analysis.

<u>Boiler B-2 to B-5 Replacement - Actual to PTE</u>

For the replacement of Boiler B-2 with B-5, G-P uses the actual-to-PTE (potential to emit) applicability test to determine whether a significant increase has occurred which is presented as a baseline actual emissions for Boiler B-2 and a PTE for Boiler B-5. Boiler B-5 will utilize low-$NO_X$ burners and flue gas recirculation (FGR) to minimize the formation of $NO_X$ emissions.

G-P is requesting the 180 day shakedown provision for a replacement unit under Part 7 Prevention Of Significant Deterioration (PSD), OAC 252:100-8-31, Definitions. G-P cites the following rule criteria (shown in italics) and their explanation concerning how boiler B-5 meets those criteria (shown in Courier New 10 Font).

*Replacement unit means an emissions unit for which all the criteria listed in paragraphs (A) through (D) of this definition are met. No creditable emission reduction shall be generated from shutting down the existing emissions unit that is replaced.*

*(A) The emissions unit is a reconstructed unit within the meaning of 40 CFR 60.15(b)(1), or the emissions unit completely takes the place of an existing emissions unit.*

Boiler B-5 will completely replace B-2, which will permanently cease operation after a sufficient shakedown period for B-5.

*(B) The emissions unit is identical to or functionally equivalent to the replaced emissions unit.*

B-2 generates steam that feeds a common header along with the other power boilers in operation at the Muskogee Mill. The common steam header provides steam to both process units and steam turbines. The steam turbines use the steam to produce electricity for use on-site while extracting lower pressure steam for other facility process units. B-5, which is replacing B-2, will provide steam to the same common steam header for ultimate use in the same process units and steam turbines. No new steam headers or steam-using equipment are being constructed or modified with the proposed project. Given that B-5 will produce steam for exactly the same purpose as B-2, it is "functionally equivalent" to B-2.

*(C) The replacement unit does not alter the basic design parameter(s) of the process unit.*

The main function of a boiler is to heat water to generate steam. Boilers are designed to provide a specific steam output rate based on the needs of the steam-using equipment. All other aspects of boiler design (such as operating pressure and temperature, fuel(s) fired, heat input rating, physical size and structural characteristics, etc.) are developed from the starting point of required output steaming rate. Therefore, when analyzing a boiler as a replacement unit, GP believes that an appropriate "basic design parameter" is the output steaming rate. B-2 has a steam generating capacity of 300,000 lb/hr and B-5 is designed to match that steam output capacity. While the two boilers will achieve the output rate using different fuels and different maximum heat input rates (440 MMBtu/hr for B-2 and 415 MMBtu/hr for B-5), the "basic design parameter" of the boilers will be exactly the same. In short, B-5 is designed to replace the function of B-2 and will completely assume its role in the overall operation of the Mill.

*(D) The replaced emissions unit is permanently removed from the major stationary source, otherwise permanently disabled, or permanently barred from operating by a permit that is enforceable as a practical matter. If the replaced emissions unit is brought back into operation, it shall constitute a new emissions unit.*

B-2 will permanently cease operation after a reasonable shakedown period of B-5. With this application, GP is requesting removal of B-2 from the facility's operating permit upon completion of the shakedown period.

DSI System for Boilers B-3 and B-4 – Actual to PTE and Actual to PAE

The applicability test for the DSI System is presented as a zero baseline to potential emissions. The applicability test for Boilers B-3 and B-4, which are also affected by the DSI System, is presented as actual-to-projected-actual emissions, accounting for excludable emissions.

**Step 1 – Calculate BAE**

Past actual emissions for each pollutant from B-2 were calculated on a monthly basis for the time period from January 2007 through December 2015, which is within the 10-year period immediately preceding the submittal of a complete permit application. An annual average emission rate was calculated for each 24 consecutive month period and the baseline period was selected by choosing the 24-month period with the highest total annual average emission rate for each pollutant, January 2007 through December 2008. The application states that emissions associated with startups and shutdowns of B-2 are not known to be different than during normal operation. The application also states that pursuant to the definition of baseline actual emissions, OAC 252:100-31, baseline emission factors are the most current and accurate emission factors available for each pollutant and may differ from the emission factors used in previous emission inventory calculations. Also, the same emissions factors will be used throughout the entire analysis, including for BAE DG, CHA, and PAE. Therefore, only the one presentation of emissions factors is needed. They are included in the following tables.

| **Boiler B-2 BAE Emissions Factors<br>January 2007 through December 2008** | | | |
|---|---|---|---|
| **Pollutant** | **High-Btu Coal Emission Factor (Lbs/MMBTU)** | **Low-Btu Coal Emission Factor (Lbs/MMBTU)** | **Natural Gas Emission Factor (Lbs/MMscf** |
| PM | 0.032 (1) | 0.032 (2) | 7.6 (4) |
| $PM_{10}$ | 0.021 (1) | 0.025 (2) | 7.6 (4) |
| $PM_{2.5}$ | 0.009 (1) | 0.018 (2) | 7.6 (4) |
| $NO_X$ | 0.43 (1) | 0.35 (5) | 190 (4) |
| CO | 0.022 (1) | 0.005 (3) | 84 (4) |
| $SO_2$ | 0.644 (1) | 0.386 (3) | 0.6 (4) |
| VOC | 0.075 (1) | 0.002 (3) | 5.5 (4) |
| SAM | 0.001 (1) | 0.024 (3) | - |
| Lead | 6.20E-06 (1) | 1.80E-06 (2) | 0.0005 (4) |

| Boiler B-2 BAE Emissions Factors<br>January 2007 through December 2008 | | | |
|---|---|---|---|
| **Pollutant** | **High-Btu Coal Emission Factor (Lbs/MMBTU)** | **Low-Btu Coal Emission Factor (Lbs/MMBTU)** | **Natural Gas Emission Factor (Lbs/MMscf** |
| HF | 0.006 (1) | 0.001 (3) | - |

(1) January 2003 stack test
(2) November 2014 stack test
(3) May 2003 stack test
(4) AP-42, Chapter 1.4
(5) May 2015 stack test

| Boiler B-3 BAE Coal Factors - January 2007 through December 2008 | | | |
|---|---|---|---|
| **Pollutant** | **Units** | **Factor (1)** | **Source** |
| Filterable PM | lb/MMBtu | 0.009 | Stack Test (3/14) |
| Condensable PM | lb/MMBtu | 0.006 | Stack Test (3/14) |
| Filterable $PM_{10}$ | % | 92 | Particle size data for filterable PM10 and filterable PM2.5 obtained from AP-42, Chapter 1.1, Bituminous and Subbituminous Coal Combustion, Table 1.1-6, for dry bottom boilers burning pulverized coal with a baghouse: |
| Filterable $PM_{2.5}$ | % | 53 | |
| PM | lb/MMBtu | 0.015 | Stack Test (3/14), includes filterable and condensable |
| $PM_{10}$ | lb/MMBtu | 0.014 | Stack Test (3/14), includes particle size data for filterable and condensable |
| $PM_{2.5}$ | lb/MMBtu | 0.011 | Stack Test (3/14), includes particle size data for filterable and condensable |
| VOC | lb/MMBtu | 0.001 | Stack Test (5/03) |
| $SO_2$ | lb/MMBtu | 0.403 | Stack Test (5/03) |
| $NO_X$ | lb/MMBtu | 0.254 | Stack Test (2016) |
| CO | lb/MMBtu | 0.015 | Stack Test (2016) |
| Lead | lb/MMBtu | 2.30E-06 | Stack Test (2016) |
| SAM | lb/MMBtu | 3.00E-03 | Stack Test (5/03) |
| HF | lb/MMBtu | 0.001 | Stack Test (5/03) |

(1) Did not burn high Btu coal alone. Small amounts of High Btu coal blended with Low Btu coal. Emissions factors represent the blend.

| Boiler B-4 BAE Coal Factors - January 2007 through December 2008 | | | |
|---|---|---|---|
| **Pollutant** | **Units** | **Factor (1)** | **Source** |
| Filterable PM | lb/MMBtu | 0.018 | Stack Test (3/14) |
| Condensable PM | lb/MMBtu | 0.019 | Stack Test (3/14) |
| Filterable $PM_{10}$ | % | 92 | Particle size data for filterable PM10 and filterable PM2.5 obtained from AP-42, Chapter 1.1, Bituminous and Subbituminous Coal Combustion, Table 1.1-6, for dry bottom boilers burning pulverized coal with a baghouse: |
| Filterable $PM_{2.5}$ | % | 53 | |
| PM | lb/MMBtu | 0.037 | Stack Test (3/14), includes filterable and condensable |
| $PM_{10}$ | lb/MMBtu | 0.036 | Stack Test (3/14), includes particle size data for filterable and condensable |
| $PM_{2.5}$ | lb/MMBtu | 0.029 | Stack Test (3/14), includes particle size data for filterable and condensable |
| VOC | lb/MMBtu | 0.001 | Stack Test (4/03) |
| $SO_2$ | lb/MMBtu | 0.631 | Stack Test (4/03) |
| $NO_X$ | lb/MMBtu | 0.496 | Stack Test (2016) |
| CO | lb/MMBtu | 0.012 | Stack Test (4/03) |

| Boiler B-4 BAE Coal Factors - January 2007 through December 2008 | | | |
|---|---|---|---|
| **Pollutant** | **Units** | **Factor [1]** | **Source** |
| Lead | lb/MMBtu | 1.10E-06 | Stack Test (10/13) |
| SAM | lb/MMBtu | 4.00E-03 | Stack Test (4/03) |
| HF | lb/MMBtu | 0.001 | Stack Test (4/03) |

(1) Did not burn high Btu coal alone. Small amounts of High Btu coal blended with Low Btu coal. Emissions factors represent the blend.

| Boilers B-3 and B-4 BAE Natural Gas Factors January 2007 through December 2008 | | | |
|---|---|---|---|
| **Pollutant** | **Units** | **Factor** | **Source** |
| PM | **Lbs/MMBtu** | 0.0075 | AP-42, Chapter 1.4 |
| $PM_{10}$ | **Lbs/MMBtu** | 0.0075 | AP-42, Chapter 1.4 |
| $PM_{2.5}$ | **Lbs/MMBtu** | 0.0075 | AP-42, Chapter 1.4 |
| $NO_X$ | **Lbs/MMBtu** | 0.167 | AP-42, Chapter 1.4 |
| CO | **Lbs/MMBtu** | B-3 0.024; B-4 0.082 | AP-42, Chapter 1.4 |
| $SO_2$ | **Lbs/MMBtu** | 0.0006 | AP-42, Chapter 1.4 |
| VOC | **Lbs/MMBtu** | 0.0054 | AP-42, Chapter 1.4 |
| SAM | **-** | - | AP-42, Chapter 1.4 |
| Lead | **Lbs/MMBtu** | 5E-07 | AP-42, Chapter 1.4 |
| HF | **-** | - | AP-42 Chapter 1.4 |

| B-2 Fuel Utilization - January 2007 through December 2008 | |
|---|---|
| | **B-2** |
| **Baseline Period** | [January 2007 through December 2008] ÷ 2 |
| **Natural Gas (MMScf)** | 7.908 [1] |
| **Low Btu Coal (MMBtu)** | 94,009 |
| **High Btu Coal (MMBtu)** | 2,348,610 |

(1) Mostly igniter gas.

| B-3 and B-4 Fuel Utilization - January 2007 through December 2008 | | |
|---|---|---|
| | **B-3** | **B-4** |
| **Baseline Period** | [January 2007 through December 2008] ÷ 2 | [January 2007 through December 2008] ÷ 2 |
| **Natural Gas (MMBut)** | 2.247 | 1.982 |
| **Low Btu Coal (MMBtu) [1]** | 3,869,993 | 3,751,128 |

(1) Mostly Low Btu coal blended with small amounts of High Btu coal.

| Baseline Emissions - January 2007 through December 2008 | | | | |
|---|---|---|---|---|
| **Pollutant** | **B-2 (TPY)** | **B-3 (TPY)** | **B-4 (TPY)** | **DSI System (TPY)** |
| PM | 39.11 | 29.03 | 69.40 | 0 |
| $PM_{10}$ | 26.40 | 27.65 | 66.71 | 0 |

| Baseline Emissions - January 2007 through December 2008 | | | | |
|---|---|---|---|---|
| **Pollutant** | **B-2 (TPY)** | **B-3 (TPY)** | **B-4 (TPY)** | **DSI System (TPY)** |
| $PM_{2.5}$ | 11.77 | 20.85 | 53.54 | 0 |
| $NO_X$ | 522.15 | 491.68 | 930.45 | - |
| CO | 26.41 | 29.06 | 22.58 | - |
| $SO_2$ | 774.40 | 779.80 | 1,183.48 | - |
| VOC | 88.21 | 1.93 | 1.88 | - |
| SAM | 2.32 | 5.80 | 7.51 | - |
| Lead | 0.00074 | 0.0045 | 0.0021 | - |
| HF | 7.09 | 1.92 | 1.88 | - |

**Step 2 – Calculate the PAE (or PTE)**

Calculate the maximum annual emission rate in tons per year, over the five years (in some cases 10 years) after the change, considering all relevant information, including fugitive emissions and start-up, shut-down, and malfunctions. [52.21(b)(41)(i) and (ii)(*a*) and (*b*)]

DSI System PTE

The DSI system will have only one emissions point consisting of a bin vent located on the sorbent storage tank and small amounts of fugitive emissions related to road traffic to truck in the sorbent. Emissions of particulate matter from the bin vent occur during loading the sorbent into the bin. Emissions are based on the filter manufacturer's emission factor of 0.005 gr/acf, the volume of space in the bin displaced by the sorbent during loading and a 50% contingency. This calculation represents the PTE of the system. Displacement volume of the sorbent is based on a sorbent demand for each boiler of 30 lbs/hr and the density sorbent of 25 lbs/$ft^3$. The emissions to accommodate sorbent injection for two boilers are calculated as follows:

$$\frac{0.005\ gr}{Scf} * \frac{30\ lb}{hr\text{-}boiler} * \frac{ft^3}{25\ lb} * \frac{1\ lb}{7{,}000\ grains} * \frac{8760\ hrs}{year} * \frac{1\ ton}{2{,}000\ lbs} * 1.5$$

$= 5.63 \times 10^{-6}$ TPY per boiler = $2 \times 5.63 \times 10^{-6}$ TPY = $1.1263 \times 10^{-5}$ for two boilers.

Fugitive PM from trucking in the sorbent result from trucks hauling in approximately twelve loads of sorbent material per year over a paved road. G-P estimates the amount of PM to be less than 0.005 TPY.

Boiler B-5 (B-2 replacement) PTE

Boiler **B-5** will be a natural gas-fired package boiler rated at 415 MMBTUH.

| Boiler B-5 PTE Factors | | |
|---|---|---|
| **Pollutant** | **Emissions Factor (lbs/MMBtu)** | **Reference** |
| PM | 0.0075 | AP-42, Chapter 1.4 |

| Boiler B-5 PTE Factors | | |
|---|---|---|
| **Pollutant** | **Emissions Factor (lbs/MMBtu)** | **Reference** |
| $PM_{10}$ | 0.0075 | AP-42, Chapter 1.4 |
| $PM_{2.5}$ | 0.0075 | AP-42, Chapter 1.4 |
| $NO_X$ | 0.20 | NSPS Db & OAC 252:100-33 limits |
| CO | 0.05 | Vendor guarantee |
| $SO_2$ | 0.0006 | AP-42, Chapter 1.4 |
| VOC | 0.0054 | AP-42, Chapter 1.4 |
| SAM | - | - |
| Pb | 5E-07 | AP-42, Chapter 1.4 |

| Boiler B-5 PTE | |
|---|---|
| **Pollutant** | **B-5 (TPY)** |
| PM | 13.54 |
| $PM_{10}$ | 13.54 |
| $PM_{2.5}$ | 13.54 |
| $NO_X$ | 363.54 |
| CO | 90.89 |
| $SO_2$ | 1.07 |
| VOC | 9.80 |
| Pb | 0.00089 |

G-P confirmed that the BART modeling for B-2 was based on 193 lb $NO_X$/day (845 TPY). This is well above the B-5 PTE of 360 TPY. Therefore, there is no relaxation of the BART limit.

Boilers B-3 and B-4 PAE

In determining the PAE for Boilers B-3 and B-4, G-P considered factors relevant to steam generation units for purposes of providing both process steam and steam to produce electricity needed to operate the facility over a 5-year period, outside the scope of the DSI System installation. These factors include product demand which dictates process steam and electricity demand. The cost of internally generated electricity has to be compared to purchasing outside electricity which involves evaluation of interrelated factors associated with electricity generation such as fuel mix and fuel price. G-P operates multiple steam generating units based on the cost and efficiency of operating each unit. The steam generating units are facility-wide support equipment and are not always fully or equally utilized in mill production. G-P reviewed the historic annual operating rates and emissions rates of the boilers and determined each boiler is not anticipated to operate materially higher than it has in the past on an annual basis. However, to account for unforeseen scenarios that may dictate the boilers operate more in the future, GP incorporated a 10% safety factor when determining the projected actual boiler utilization rates to be used in the analysis. GP based the projected actual utilization rates on the maximum rolling 24-month value for B-3 and the maximum rolling 12-month value for B-4. These projected actual annual utilization rates are achievable rates of operation and are less than the maximum

potential annual utilization rates of each boiler. G-P estimated the annual utilization rates in fuel usage of coal and natural gas and calculated PAE using the same emissions factors as for BAE.

Additional Emissions from DSI System

The emissions added to the exhaust streams of the boiler by DSI is calculated based on the injection rate of the sorbent and the efficiency of the baghouse filters of 99.88%. For each boiler the emissions are 0.16 tons per year PM, $PM_{10}$ and $PM_{2.5}$.

| PTE/PAE Emissions | | | | |
|---|---|---|---|---|
| **Pollutant** | **B-5 (TPY)** | **B-3 (TPY)** | **B-4 (TPY)** | **DSI System Vent (TPY)** |
| PM | 13.54 | 33.62 (1) | 79.81 (1) | 1.1E-5 |
| $PM_{10}$ | 13.54 | 32.01 (1) | 76.71 (1) | 1.1E-5 |
| $PM_{2.5}$ | 13.54 | 24.14 (1) | 61.57 (1) | 1.1E-5 |
| $NO_X$ | 363.54 | 569.37 | 1,070.18 | - |
| CO | 90.89 | 33.63 | 26.17 | - |
| $SO_2$ | 1.07 | 903.25 | 1,360.70 | - |
| VOC | 9.80 | 2.24 | 2.18 | - |
| SAM | - | 6.72 | 8.63 (1) | - |
| Lead | 0.00089 | 0.0052 | 0.0024 | - |
| HF | - | 2.24 | 2.16 | - |

(1) Includes the additional 0.16 TPY sorbent injected from the DSI System.

**Step 3. Determine Unrelated and "Could Have Been Accommodated", Excludable Emissions**

Examine the portion of post-change emissions and determine if any of such emissions above the baseline are not related to the project. If any of the emissions are not related, and the emissions unit(s) could have emitted at this level before the change if operated as projected, then those emissions may be excluded from the PAE calculation. This determination must consider such things as the currently permitted operational limits, emission rate limits, maximum firing rates, and allowable amount of each fuel that could be fired, and the expected mode of operations. A source may only subtract emissions from the maximum annual emission rate determined in Step 2 if those emissions could have been legally and physically accommodated during the baseline period and are unrelated to the change. [52.21 (b )(41)(ii)(c)]

Unrelated Emissions

The proposed project to add a DSI system to the exhaust stream of Boilers B-3 and B-4 will not affect the manner in which GP operates those boilers. As stated above, in determining the PAE for Boilers B-3 and B-4, G-P considered factors relevant to providing steam generation for purposes of providing both process steam and facility electricity needed to operate the facility over a 5-year period, outside the scope of the DSI System installation. In projecting future operation and emissions, GP must preserve the most operational flexibility for making real-time decisions on operating multiple steam producing units. Therefore, with the exception of the 0.16

TPY per boiler of $PM/PM_{10}/PM_{2.5}$ that is directly attributed to the DSI system, all emission increases projected in the BAE-to-PAE analysis are unrelated to the project and represent possible demand on the unit. The following table represents emissions increases above BAE that are unrelated to the project.

| **Emission Increases Unrelated to the Project** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **$NO_X$ (TPY)** | **CO (TPY)** | **$SO_2$ (TPY)** | **VOC (TPY)** | **PM (TPY)** | **$PM_{10}$ (TPY)** | **$PM_{2.5}$ (TPY)** | **SAM (TPY)** | **Pb (TPY)** | **HF (TPY)** |
| **B-3** | 77.69 | 4.57 | 123.45 | 0.31 | 4.43 | 4.20 | 3.13 | 0.92 | 7.0E-04 | 0.33 |
| **B-4** | 139.73 | 3.59 | 177.22 | 0.30 | 10.25 | 9.84 | 7.87 | 1.12 | 3.0E-04 | 0.28 |

Could Have Been Accommodated (CHA)

Only the portion of the emissions increase that the mill can also demonstrate that it is capable of accommodating and that are unrelated to the proposed project can be excluded from the PAE. Per EPA Region 4's March 18, 2010 letter to Georgia Pacific Wood Products LLC, capable of accommodating emissions can be calculated using the highest demonstrated monthly operating level during the baseline period. Therefore, to calculate the level of emissions that each boiler could have accommodated during the baseline period, GP identified the maximum utilization month for each boiler and pollutant (January 2007 for B-3 and June 2007 for B-4). These emissions were based on fuel inputs during the relevant periods and the same emissions factors as used for BAE. These monthly emissions were annualized it by dividing by the number of actual days of operation in that month and multiplying by the average annual operating days over the entire 10-year baseline review period. The following table illustrates the results of this calculation.

| **Capable Of Accommodating** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **$NO_X$ (TPY)** | **CO (TPY)** | **$SO_2$ (TPY)** | **VOC (TPY)** | **PM (TPY)** | **$PM_{10}$ (TPY)** | **$PM_{2.5}$ (TPY)** | **SAM (TPY)** | **Pb (TPY)** | **HF (TPY)** |
| **B-3** | 569.37 | 33.63 | 903.25 | 2.24 | 33.62 | 32.01 | 24.14 | 6.72 | 5.2E-3 | 2.24 |
| **B-4** | 1,070.18 | 26.17 | 1,360.70 | 2.18 | 79.81 | 76.71 | 61.57 | 8.63 | 2.4E-3 | 2.16 |

The level of emissions that are excludable from projected actual emissions is determined by comparing could have accommodated emissions minus baseline emissions to the emission increases that have been determined to be unrelated to the proposed project and selecting the minimum result. This comparison ensures that any emissions that are excluded from projected actual emissions both could have been accommodated during the baseline period and are unrelated to the proposed project. The table below makes this demonstration.

| **Determining Excludable Emissions** | | | | | | |
|---|---|---|---|---|---|---|
| | **B-3** | | | **B-4** | | |
| **Pollutant** | **CHA – BAE (TPY)** | **Unrelated Emissions (TPY)** | **Excludable Emissions (TPY)** | **CHA – BAE (TPY)** | **Unrelated Emissions (TPY)** | **Excludable Emissions (TPY)** |
| **PM** | 4.59 | 4.43 | 4.43 | 10.41 | 10.25 | 10.25 |
| **$PM_{10}$** | 4.36 | 4.20 | 4.20 | 10.00 | 9.84 | 9.84 |
| **$PM_{2.5}$** | 3.29 | 3.13 | 3.13 | 8.03 | 7.87 | 7.87 |

| Determining Excludable Emissions | | | | | | |
|---|---|---|---|---|---|---|
| | B-3 | | | B-4 | | |
| **Pollutant** | **CHA – BAE (TPY)** | **Unrelated Emissions (TPY)** | **Excludable Emissions (TPY)** | **CHA – BAE (TPY)** | **Unrelated Emissions (TPY)** | **Excludable Emissions (TPY)** |
| **$NO_X$** | 77.69 | 77.69 | 77.69 | 139.73 | 139.73 | 139.73 |
| **CO** | 4.57 | 4.57 | 4.57 | 3.59 | 3.59 | 3.59 |
| **$SO_2$** | 123.45 | 123.45 | 123.45 | 177.22 | 177.22 | 177.22 |
| **VOC** | 0.31 | 0.31 | 0.31 | 0.30 | 0.30 | 0.30 |
| **SAM** | 0.92 | 0.92 | 0.92 | 1.12 | 1.12 | 1.12 |
| **Lead** | 7.0E-4 | 7.0E-4 | 7.0E-4 | 3.0E-4 | 3.0E-4 | 3.0E-4 |
| **HF** | 0.33 | 0.33 | 0.33 | 0.28 | 0.28 | 0.28 |

The following table illustrates the PAE corrected for the excludable emissions.

| PAE Less Excludable Emissions | | | | | | |
|---|---|---|---|---|---|---|
| | B-3 | | | B-4 | | |
| **Pollutant** | **PAE (TPY)** | **Excludable (TPY)** | **PAE – Excludable (TPY)** | **PAE (TPY)** | **Excludable (TPY)** | **PAE - Excludable (TPY)** |
| **PM** | 33.62 | 4.43 | 29.19 | 79.81 | 10.25 | 69.56 |
| **$PM_{10}$** | 32.01 | 4.20 | 27.81 | 76.71 | 9.84 | 66.87 |
| **$PM_{2.5}$** | 24.14 | 3.13 | 21.01 | 61.57 | 7.87 | 53.70 |
| **$NO_X$** | 569.37 | 77.69 | 491.68 | 1,070.18 | 139.73 | 930.45 |
| **CO** | 33.63 | 4.57 | 29.06 | 26.17 | 3.59 | 22.58 |
| **$SO_2$** | 903.25 | 123.45 | 779.80 | 1,360.70 | 177.22 | 1,183.48 |
| **VOC** | 2.24 | 0.31 | 1.93 | 2.18 | 0.30 | 1.88 |
| **SAM** | 6.72 | 0.92 | 5.80 | 8.63 | 1.12 | 7.51 |
| **Lead** | 0.0052 | 7.0E-4 | 4.5E-3 | 0.0024 | 3.0E-4 | 2.1E-3 |
| **HF** | 2.24 | 0.33 | 1.92 | 2.16 | 0.28 | 1.88 |

**Step 4. Subtract the BAE from the emissions derived in Step 3**

| PAE-to-BAE Increase Boilers B-3 and B-4 | | | | | | |
|---|---|---|---|---|---|---|
| | B-3 | | | B-4 | | |
| **Pollutant** | **PAE – Excludable (TPY)** | **BAE (TPY)** | **BAE to PAE Increase (TPY)** | **PAE - Excludable (TPY)** | **BAE (TPY)** | **PAE to PAE Increase (TPY)** |
| **PM** | 29.19 | 29.03 | 0.16 | 69.56 | 69.40 | 0.16 |
| **$PM_{10}$** | 27.81 | 27.65 | 0.16 | 66.87 | 66.71 | 0.16 |
| **$PM_{2.5}$** | 21.01 | 20.85 | 0.16 | 53.70 | 53.54 | 0.16 |
| **$NO_X$** | 491.68 | 491.68 | 0 | 930.45 | 930.45 | 0 |
| **CO** | 29.06 | 29.06 | 0 | 22.58 | 22.58 | 0 |
| **$SO_2$** | 779.80 | 779.80 | 0 | 1,183.48 | 1,183.48 | 0 |

| PAE-to-BAE Increase Boilers B-3 and B-4 | | | | | | |
|---|---|---|---|---|---|---|
| | B-3 | | | B-4 | | |
| **Pollutant** | **PAE – Excludable (TPY)** | **BAE (TPY)** | **BAE to PAE Increase (TPY)** | **PAE - Excludable (TPY)** | **BAE (TPY)** | **PAE to PAE Increase (TPY)** |
| **VOC** | 1.93 | 1.93 | 0 | 1.88 | 1.88 | 0 |
| **SAM** | 5.80 | 5.80 | 0 | 7.51 | 7.51 | 0 |
| **Lead** | 4.5E-3 | 0.0045 | 0 | 2.1E-3 | 0.0021 | 0 |
| **HF** | 1.92 | 1.92 | 0 | 1.88 | 1.88 | 0 |

Note that where PAE-to-BAE increase was a negative number, the value entered was zero. Since the emissions factors were the same throughout the analysis, there would have been no decreases in emissions. The differences were likely a result of rounding through the analysis.

For Boiler B-5 and the DSI System, the emission increases are based on PTE and the preceding steps for determining excludable emissions are not relevant. Increases in emissions for the replacement boiler B-5 are presented as PTE-to-Actual Baseline using PTE for B-5 and baseline for B-2, and emissions for the DSI System are presented as PTE to zero baseline.

| PTE-to-Baseline Boiler B-2/B-5 and DSI System | | | | | | |
|---|---|---|---|---|---|---|
| | B-5 | | | DSI System Vent | | |
| **Pollutant** | **BAE B-2 (TPY)** | **PTE B-5 (TPY)** | **BAE to PTE Increase (TPY)** | **BAE (TPY)** | **PTE (TPY)** | **PTE (TPY)** |
| **PM** | 39.11 | 13.54 | 0 | 0 | 1.1E-5 | 1.1E-5 |
| **$PM_{10}$** | 26.40 | 13.54 | 0 | 0 | 1.1E-5 | 1.1E-5 |
| **$PM_{2.5}$** | 11.77 | 13.54 | 1.77 | 0 | 1.1E-5 | 1.1E-5 |
| **$NO_X$** | 522.15 | 363.54 | 0 | - | - | - |
| **CO** | 26.41 | 90.89 | 64.4872 | - | - | - |
| **$SO_2$** | 774.40 | 1.07 | 0 | - | - | - |
| **VOC** | 88.21 | 9.80 | 0 | - | - | - |
| **SAM** | 2.32 | - | 0 | - | - | - |
| **Lead** | 0.00074 | 0.00089 | 0.0001 | - | - | - |
| **HF** | 7.09 | - | 0 | - | - | - |

**Step 5. Compare the emissions increase from Step 4 to the significance level for each pollutant**

As shown by the following table, no NSR significance levels were exceeded, and therefore, no significant emission increase occurs of any regulated NSR pollutants as a result of the proposed boiler replacement and DSI system projects.

| Comparison of Increases to Significance Levels | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Pollutant** | **B-5 (TPY)** | **B-3 (TPY)** | **B-4 (TPY)** | **DSI System (TPY)*** | **Total (TPY)** | **Significance Level** | **Significant** |
| PM | 0 | 0.16 | 0.16 | 0.01 | 0.33 | 25 | No |
| $PM_{10}$ | 0 | 0.16 | 0.16 | 0.01 | 0.33 | 15 | No |
| $PM_{2.5}$ | 1.77 | 0.16 | 0.16 | 0.01 | 2.10 | 10 | No |
| $NO_X$ | 0 | 0 | 0 | - | 0 | 40 | No |
| CO | 64.48 | 0 | 0 | - | 64.48 | 100 | No |
| $SO_2$ | 0 | 0 | 0 | - | 0 | 40 | No |
| VOC | 0 | 0 | 0 | - | 0 | 40 | No |
| SAM | 0 | 0 | 0 | - | 0 | 7 | No |
| Lead | 0 | 0 | 0 | - | 0 | 0.6 | No |
| HF | 0 | 0 | 0 | - | 0 | 3 | No |

* Includes DSI vent, road traffic from hauling and loading sorbent, and additional ash handling from the two boilers.

**Associated Emissions**

Associated emissions that could occur from Boilers B-3 and B-4 are PM emissions resulting from the additional ash created by the DSI sorbent that is collected in the baghouses and ultimately loaded and hauled from the baghouses to the disposal site. G-P estimates this additional PM generated as fugitives to be less than 0.005 TPY. As noted above, the column in the table for DSI System emissions includes DSI vent emissions, road traffic from hauling in and loading sorbent and hauling off additional ash created by the sorbent injection from the two coal fired boilers.

Following is a comparison summary of the "Before and After" emissions factors is included in the PSD analysis.

| | **COAL** | | **NATURAL GAS** | |
|---|---|---|---|---|
| **B-2 440 MMBTUH** | **Emissions Factor Before (lbs/MMBtu)** | **Emissions Factor After (lbs/MMBtu)** | **Emissions Factor Before** | **Emissions Factor After** |
| $PM_{10}$ (Hi Btu Coal) | 0.032 2003 Stack Test | 0.0468 BMACT | AP-42 | AP-42 |
| $PM_{10}$ (Lo Btu Coal) | 0.042 2009 Stack Test | 0.0468 BMACT | AP-42 | AP-42 |
| $NO_X$ (Hi Btu Coal) | 0.43 2003 Stack Test | 0.7 NSPS D | AP-42 | AP-42 |
| $NO_X$ (Lo Btu Coal) | 0.462 2009 Stack Test | 0.7 NSPS D | AP-42 | AP-42 |

| | COAL | | NATURAL GAS | |
|---|---|---|---|---|
| $SO_2$ (Hi Btu Coal) | 0.644<br>2003 Stack Test | 1.2<br>NSPS D | AP-42 | AP-42 |
| $SO_2$ (Lo Btu Coal) | 0.386<br>2009 Stack Test | 1.20<br>NSPS D | AP-42 | AP-42 |
| VOC (Hi Btu Coal) | 0.075<br>2003 Stack Test | 0.075<br>2003 Stack Test | AP-42 | AP-42 |
| VOC (Lo Btu Coal) | 0.002<br>2009 Stack Test | 0.075<br>2003 Stack Test - Increased to Match Hi Btu | AP-42 | AP-42 |
| CO (Hi Btu Coal) | 0.022<br>2003 Stack Test | 0.025<br>AP-42 | AP-42 | AP-42 |
| CO (Lo Btu Coal) | 0.005<br>2009 Stack Test | 0.025<br>AP-42 | AP-42 | AP-42 |
| HCL (Hi Btu Coal) | 0.012<br>2009 Stack Test | 0.022<br>BMACT | NA | NA |
| HCL (Lo Btu Coal) | 0.00093<br>Stack Test | 0.022<br>BMACT | NA | NA |
| $H_2SO_4$ (Hi Btu Coal) | 0.001<br>2003 Stack Test | 0.024<br>2003 Stack Test – Match Low Btu | NA | NA |
| $H_2SO_4$ (Lo Btu Coal) | 0.024<br>2003 Stack Test [(1)] | 0.024<br>2003 Stack Test | NA | NA |
| HF (Hi Btu Coal) | 0.006<br>2003 Stack Test | 0.0075<br>AP-42 | NA | NA |
| HF (Lo Btu Coal) | 0.001<br>2009 Stack Test | 0.0075<br>AP-42 | NA | NA |
| **B-3<br>557.11 MMBTUH** | **Emissions Factor Before (lbs/MMBtu)** | **Emissions Factor After (lbs/MMBtu)** | **Emissions Factor Before** | **Emissions Factor After** |
| $PM_{10}$ | 0.017<br>2003 & 2009 | 0.0468<br>BMACT | AP-42 | AP-42 |

| | **COAL** | | **NATURAL GAS** | |
|---|---|---|---|---|
| | Stack Test | | | |
| $NO_X$ | 0.224<br>2003 & 2009<br>Stack Test | 0.7 lbs<br>NSPS D | AP-42 | AP-42 |
| $SO_2$ | 0.403<br>2003 & 2009<br>Stack Test | 1.2 lbs<br>NSPS D | AP-42 | AP-42 |
| VOC | 0.001<br>2003 & 2009<br>Stack Test | 0.003<br>AP-42 | AP-42 | AP-42 |
| CO | 0.003<br>2003 & 2009<br>Stack Test | 0.025<br>AP-42 | AP-42 | AP-42 |
| HCL | 0.00098<br>2003 & 2009<br>Stack Test | 0.022<br>BMACT | NA | NA |
| $H_2SO_4$ | 0.003<br>2003 & 2009<br>Stack Test | 0.0084<br>AP-42 | NA | NA |
| HF | 0.001<br>2003 & 2009<br>Stack Test | 0.0075<br>AP-42 | NA | NA |
| **B-4<br>557.11 MMBTUH** | **Emissions Factor Before (lbs/MMBtu)** | **Emissions Factor After (lbs/MMBtu)** | **Emissions Factor Before** | **Emissions Factor After** |
| $PM_{10}$ | 0.017<br>2003 Stack Test | 0.0468<br>BMACT | AP-42 | AP-42 |
| $NO_X$ | 0.339<br>2003 Stack Test | 0.7 lbs<br>NSPS D | AP-42 | AP-42 |
| $SO_2$ | 0.631<br>2003 Stack Test | 1.2 lbs<br>NSPS D | AP-42 | AP-42 |
| VOC | 0.001<br>2003 Stack Test | 0.003<br>AP-42 | AP-42 | AP-42 |
| CO | 0.012<br>2003 Stack Test | 0.025<br>AP-42 | AP-42 | AP-42 |
| HCL | 0.00098<br>2003 Stack Test | 0.022<br>BMACT | NA | NA |
| $H_2SO_4$ | 0.004 | 0.0084 | NA | NA |

| | COAL | | NATURAL GAS | |
|---|---|---|---|---|
| | 2003 Stack Test | AP-42 | | |
| HF | 0.001<br>2003 Stack Test | 0.0075<br>AP-42 | NA | NA |

(1) - This change was due to an error in the 2003 stack test report. The original value reported in Permit No. 2010-278-TVR (M-1) was 0.017, but the coal flow data was incorrect. G-P's application on 5/12/15 had requested a change to 0.024, but it was overlooked in the memorandum. The correct PTE for B-2 $H_2SO_4$ in that memorandum should be 46.25 TPY, instead of 32.76 TPY.

| **B-5<br>415 MMBTUH** | **Emissions Factor (lbs/MMBtu)** |
|---|---|
| $PM_{10}$ | 0.0075<br>AP-42 |
| $NO_X$ | 0.20<br>NSPS Db &<br>OAC 252:100-33 |
| $SO_2$ | 0.0006<br>AP-42 |
| VOC | 0.0054<br>AP-42 |
| CO | 0.05 lbs<br>AP-42 |

| **$PM_{2.5}$ Emissions Factors** | | | | | |
|---|---|---|---|---|---|
| **Source** | **PM 2.5 Emission Factor Before** | **PM 2.5 Emission Factor Units** | **PM 2.5 Emission Factor Source** | **PM 2.5 Emission Factor After** | **PM 2.5 Emission Factor Source** |
| **B-1** | 7.6 | #/MMCF Gas Burned | AP-42 | 7.6 | AP-42 |
| **B-2 High Btu** | 0.03128 | #/MMBtu Coal Burned | Stack Test & AP-42 | 0.0312 | BMACT |
| **B-2 Low Btu** | 0.02425 | #/MMBtu Coal Burned | Stack Test & AP-42 | 0.0312 | BMACT |
| **B-3** | 0.01089 | #/MMBtu Coal Burned | Stack Test & AP-42 | 0.0312 | BMACT |
| **B-4** | 0.01089 | #/MMBtu Coal Burned | Stack Test & AP-42 | 0.0312 | BMACT |

| $PM_{2.5}$ Emissions Factors | | | | | |
|---|---|---|---|---|---|
| **Source** | **PM 2.5 Emission Factor Before** | **PM 2.5 Emission Factor Units** | **PM 2.5 Emission Factor Source** | **PM 2.5 Emission Factor After** | **PM 2.5 Emission Factor Source** |
| **B-5** | | #/MMCF Gas Burned | | 7.6 | AP-42 |

Finally, it should be noted that although the $NO_X$ emissions factor for Boiler B-1 was changed from 117 lbs/MMcf to 194 lbs/MMcf, both AP-42 factors, B-1 was not part of the PSD analysis.

**Greenhouse Gases**

PSD analysis for Greenhouse gases is not required unless a significant increase in the primary criteria pollutants will occur.

**Aggregation**

EPA requires that separate permitting projects be evaluated to determine whether they should be combined into a single application for PSD applicability and PSD BACT analysis on a case by case basis, commonly referred to as "aggregation". The last permitted modification at the facility was a project to install the Winder Section Dust Collection and Control System on Paper Machine #15, under Permit No. 99-113-C (M-12) issued August 12, 2013 for an emissions increase of 9.82 TPY $PM/PM_{10}/PM_{2.5}$. Since this paper machine project is entirely unrelated to the proposed boiler replacement and DSI system installation projects in scope, funding, and purpose, the projects do not need to be aggregated to determine permitting applicability. Furthermore, the projects will occur more than 3 years apart.

**Conclusion**

A significant increase from the project will not occur based on step 1) of the analysis, which was demonstrated above in detail. Therefore the second step of the analysis which involves netting is not required.

**SECTION VI. INSIGNIFICANT ACTIVITIES**

**Boiler Ash Handling**
Following is an evaluation performed by the applicant based on some research of two coal-fired power plants. One was permitted in Colorado, and the other in Kentucky.

Both permits used AP-42 to estimate particulate matter emissions from boiler ash handling operations. One permitting agency adapted AP-42 for clay and fly ash sintering at Chapter 11.8. The other agency adapted AP-42 for cement batching at Chapter 11.12. Fly ash sintering factors are uncontrolled, whereas cement batching offers controlled and uncontrolled emission factors. The boiler ash silos are equipped with baghouses that control emissions with a 99.9% efficiency.

The applicant believes that cement exhibits very similar physical characteristics as boiler ash and therefore used the cement batching factors for the following emission estimate of silo emissions.

Ash generation was estimated using 600,000 TPY of coal at 8.5% ash. The applicant used this as a worse case ash content for all high Btu coal. However, it should be noted that the permit contains conditions limiting ash content to lower values. Both fly ash and bottom ash are pneumatically conveyed to elevated silos equipped with identical baghouses. The ash is then loaded into enclosed trucks and disposed in the mill's permitted on-site landfill cells. According to Table 11.12-2, total PM emissions from Cement supplement unloading to elevated storage silo (pneumatic) are 0.0089 lbs PM/ton controlled and 3.14 lbs/ton uncontrolled. Estimating a maximum potential ash generation of approximately 51,000 TPY, potential PM emissions would equate to 454 lbs/year.

For truck loading, dumping and pile erosion, Chapter 13.2.4 Aggregate Handling and Storage Piles, was used.
From Section 13.2.4:

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

where: $k = 0.35$ for $PM_{10}$,
U = wind speed (15 mph, worst case value from Ranges of Source Conditions), and
M = moisture content (0.25 %, worst case value from Ranges of Source Conditions)

Applying the above factors, E = 0.0859 lbs PM/ton of ash.

At 51,000 TPY of ash, PM emissions would equal 4,381 lbs/year from truck loading, dumping, and pile erosion. This yields a total of 4,835 lbs/year of PM emissions for all of ash handling.

**Converting Trim Vent**
Following is an evaluation performed by the applicant based on emissions information obtained from a sister facility in Green Bay, Wisconsin.

At the subject facility, scrap paper from the converting operations, called "trim" or "broke," is conveyed to the converting broke pulper to be mixed with water for reuse in the papermaking process. Much of the broke is transported in carts and dumpsters to a pulper or removed pneumatically from the point of generation and dumped on an overhead conveyor to a pulper. Some of the broke, however, is conveyed pneumatically all the way to the top of a pulper where airborne particulate is removed from the air stream, and the air stream is cleaned by a baghouse before discharge to the atmosphere. This operational scenario describes the Converting operations at the subject facility as well as Converting operations at a sister tissue facility located in Green Bay, Wisconsin.

The Green Bay facility had stack testing performed on three stacks from their trim collection system. Those stack emissions totaled 7.22 lbs/hr (31.6 TPY), uncontrolled. The trim collection system at the subject facility is equipped with baghouses having collection efficiency ratings of

99.9% prior to discharge to the atmosphere. At 7.22 lbs/hr and 99.9% collection efficiency, annual emissions would equate to 63.2 lbs/year.

**Printed Napkins**
Printed napkins are printed by a group of eight (8) letterpress printing presses in the converting area. These presses do not perform publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing and are not subject to the printing and publishing MACT, Subpart KK. They were not included in the Title V application because as a group their emissions are below 5 TPY VOC. Collectively, VOC emissions have increased to near 5 TPY. Individually, however, emissions are still well below this threshold.

**Ozone Treaters**
The original Title V permit evaluated emissions from an Enercon Ozone Treater Station, Model ASO12V-160, that generates Ozone used to treat the polyethylene film produced at the Polyethylene Plant. This treatment allows for enhanced ink bonding to the film. Ozone is generated as a result of treating the film in this manner. The ozone from this source is vented to the atmosphere without any controls. Emissions of ozone from this vent line have been calculated to be 0.365 lbs/hr (1.599 TPY) based on manufacturer's data that the Enercon Ozone Treater Station is designed to produce 0.073 lbs/hr of ozone per KvA (kilovolt-ampere) and the maximum input of electricity is 5.0 KvA. There are no emission control devices attached to this system. A second Ozone treater was installed for use when the primary system is down or when there are special printing needs that call for the film to be re-treated prior to printing. It is installed on the flexographic printer with an ozone decomposer mounted downstream. The decomposer is 95% effective and reduces generated ozone to molecular oxygen. Emissions are exhausted to the atmosphere outside to the south of the building. This Ozone treater is seldom used and is currently present as a back-up system. The permit allows for simultaneous operation of the two Ozone treaters.

| **83-062-O (PSD)** | | | | | |
|---|---|---|---|---|---|
| **Stack** | **Source** | **Power Input** | **Emissions Factor** | **Ozone Emissions** | |
| | | | | **Lbs/hr** | **TPY** |
| 1 | Enercon Ozone Treater Model ASO12V-160 | 5 Kva | 0.073 lbs/Kva | 0.365 | 1.599 |
| 2 & 3 | Enercon Ozone Treater Model ASO41V-300 with Decomposer Model 03X-16 | 10 Kva | 0.073 lbs/Kva | 0.0365 | 0.1599 |

The Mill Process Improvement Project added three new units. They do not have do not have decomposers, so their emissions are as follows:

3 units × 10 kVa/unit × 0.073 lb/kVa/hr × 8,760 hrs/yr = 9.6 TPY of ozone.

The insignificant activities identified and justified in the application are duplicated below. Records must be available to confirm the insignificance of the activities. Appropriate recordkeeping of activities indicated below with "*" is specified in the Specific Conditions.

1. Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTU/hr heat input (commercial natural gas). The applicant operates several space heaters at the facility.
2. * Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. There is one aboveground 10,000-gallon gasoline tank existing at the facility. The facility used only 9,500 gallons from this tank during the year 2003. This tank is equipped with a submerged fill pipe.
3. * Storage tanks with less than or equal to 10,000 gallons capacity that store volatile organic liquids with a true vapor pressure less than or equal to 1.0 psia at maximum storage temperature. There are several aboveground diesel tanks at the facility including a 100,000-gallon No. 2 diesel tank used to fuel a locomotive and some heavy equipment.
4. * Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. There are several diesel and solvent tanks at the facility.
5. Additions or upgrades of instrumentation or control systems that result in emissions increases less than the pollutant quantities specified in OAC 252:100-8-3(e)(1).
6. Cold degreasing operations utilizing solvents that are denser than air. There are numerous activities under this category.
7. Site restoration and/or bioremediation activities of < 5 years expected duration. There are no activities under this category at the facility at this time.
8. Hydrocarbon contaminated soil aeration pads utilized for soils excavated at the facility only. There are no activities under this category at the facility at this time.
9. Emissions from the operation of groundwater remediation wells including but not limited to emissions from venting, pumping, and collecting activities subject to *de minimis* limits for air toxics (OAC 252:100-41-43) and HAPs (§112(b) of CAAA90). The facility currently operates groundwater monitoring wells that are required by the facility's solid waste landfill permits. There are no groundwater remediation wells at the facility at this time.
10. * Non-commercial water washing operations (less than 2,250 barrels/year) and drum crushing operations of empty barrels less than or equal to 55 gallons with less than three percent by volume of residual material.
11. Hazardous waste and hazardous materials drum staging areas. There are numerous activities under this category.
12. Sanitary sewage collection and treatment facilities other than incinerators and Publicly Owned Treatment Works (POTW). Stacks or vents for sanitary sewer plumbing traps are also included (i.e., lift station). All of the facility's sanitary sewage is collected by two lift stations and discharged to the local POTW.
13. Emissions from landfills and land farms unless otherwise regulated by an applicable state or federal regulation.
14. Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. There are numerous activities under this category.
15. Hand wiping and spraying of solvents from containers with less than 1 liter capacity used for spot cleaning and/or degreasing in ozone attainment areas. There are numerous activities under this category.

16. * Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant (see instructions).
    a. Boiler Ash Handling
    b. Converting Trim Vent
    c. Printed Napkins
    d. PO-1 Polythylene Extruder, Gloucester Engineering, Model #264-001, Serial #264-28879-001
17. Vacuum cleaning systems used exclusively for industrial, commercial, or residential housekeeping purposes, except those systems used to collect particulate matter subject to 252:100 and hazardous and/or toxic air contaminants.

## SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations listed in OAC 252:100, Appendix Q. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in "attainment" of these standards. In addition, modeled emissions from the proposed facility (for previous permits) demonstrated that the facility would not have a significant impact on air quality.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories were submitted and fees paid for previous years as required.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility that result in emissions not authorized in the permit and that exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities refer to those individual emission units either listed in Appendix I or whose actual calendar year emissions do not exceed the following limits.

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emission limitations and operational requirements necessary to assure compliance with all

applicable requirements for all sources are taken from existing permits, the permit application, or developed from the applicable requirement.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for affirmative defense, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter (PM)) [Applicable]
Section 19-4 regulates emissions of PM from the combustion of fuel in any new and existing fuel-burning unit, with emission limits based on maximum design heat input rating. Fuel-burning unit is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. Thus, Boilers B-1, B-2, B-3, and B-4, Paper Machine Drying Hoods PM-11, PM-12, PM-13, PM-14, and PM-15, and the PO-1 Tunnel Dryer (Flexographic Polyethylene Printer) are subject to the requirements of this subchapter. AP-42 (7/98) Table 1.4-1 lists natural gas Total Particulate Matter (TPM) emissions to be 7.6 lbs/million scf or about 0.0076 lbs/MMBTU, which demonstrates compliance. Converting these factors to units of lbs/MMBtu yields the values illustrated in the tables below, which demonstrates compliance with the allowable. Compliance with the applicable standard while burning coal was based on comparing the permitted emissions, which are the highest anticipated, to the Subchapter 19 standard.

| **EMISSION UNIT** | | **COAL Emission Factor (lbs/MMBtu)** | **NAT. GAS Emission Factor (lbs/MMBtu)** | **APP. "C" Allowable (lbs/MMBtu)** |
|---|---|---|---|---|
| **Boiler B-1** **310 MMBTUH** | | NA | 7.5E-6 | 0.27 |
| **Boiler B-2** 440 MMBTUH | Hi Btu Coal | 0.1 | 0.0076 | 0.24 |
| | Lo Btu Coal | 0.1 | 0.0076 | 0.24 |
| **Boiler B-3** 557 MMBTUH | | 0.1 | 0.0076 | 0.23 |
| **Boiler B-4** 557 MMBTUH | | 0.1 | 0.0076 | 0.23 |
| **Boiler B-5** **415 MMBTUH** | | NA | 0.0076 | 0.25 |

| EMISSION UNIT | NATURAL GAS Emission Factor (lbs/MMBtu) | APP. "C" Allowable (lbs/MMBtu) |
|---|---|---|
| **Paper Machine PM-11** (24 MMBTUH x 2) | 7.5E-6 | 0.41 |
| **Paper Machine PM-12** (16.5 MMBTUH x 2) | 7.5E-6 | 0.45 |
| **Paper Machine PM-13** (16.5 MMBTUH x 2) | 7.5E-6 | 0.45 |
| **Paper Machine PM-14** (24 MMBTUH x 2) | 7.5E-6 | 0.41 |
| **Paper Machine PM-15** (25 MMBTUH x 2) | 7.5E-6 | 0.41 |
| **PO-1 Regenerative Thermal Oxidizer** (9.6 MMBTUH) | 7.5E-6 | 0.60 |

Section 19-12 limits particulate emissions from new and existing directly fired fuel-burning units and emission points in an industrial process based on process weight rate, as specified in Appendix G. The following table illustrates the calculated hourly rates of PM emissions. All emission points are in compliance with the Subchapter 19 limits.

**Paper Machines and Coal Preparation Plant**

| EMISSION UNIT | | Emissions (lbs/hr) | Limit (lbs/hr) |
|---|---|---|---|
| PM-11 | | 2.1 | 19.7 |
| PM-12 | | 3.0 | 24.7 |
| PM-13 | | 2.6 | 22.3 |
| PM-14 | | 2.6 | 22.3 |
| PM-15 Building Vents and Reel Section Dust Collection System | | 2.3 | 21.1 |
| PM-15 Winder Section Dust Collection and Control System | | 0.5 | 21.1 |
| | **(TPY Coal)** | | |
| Railcar Unloading, Radial Stacker, Grizzly Feeder | 519,362 | 5.09 | 46.2 |
| Coal Sizer/Crusher | 519,362 | 11.86 | 46.2 |
| Conveying | 519,362 | 1.18 | 46.2 |
| Coal Bunkers | 519,362 | 1.18 | 46.2 |
| Coal Feeders, Pulverizers | Closed Process, No emissions | | |
| FS-1 Coal Pile | Emissions included with above | | |

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]

No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. Boilers B-1, B-2, B-3, B-4 and B-5 are not subject to Subchapter 25 since they are subject to an opacity limitation in NSPS Subpart D and Db. Other combustion units are fired with natural gas and are therefore not likely to exceed this standard. Equipment

subject to a Subpart Y opacity limitation at the Coal Preparation plant is not subject to Subchapter 25.

OAC 252:100-29 (Fugitive Dust) [Applicable]
No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originated in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Under normal operating conditions, this facility has negligible potential to violate this requirement; therefore it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). The limits, based on heat input, are 0.2 lbs/MMBTU for gaseous fuels and 1.2 lbs/MMBTU for solid fuels. The averaging time for the emission limits is 3 hours unless a solid fuel sampling and analysis method is used to determine emission compliance. In that case the averaging time is 24 hours. Testing was done for emissions from coal combustion, which demonstrated emissions from this fuel were well within the limits. Specific conditions in the permit limiting fuel sulfur content for the various fuels will ensure compliance with the limits when these fuels are used. The table below illustrates compliance based on the emission calculations illustrated in the permit memorandum. It should be noted that the values for natural gas combustion are based on AP-42 emission factors.

| **EMISSION UNIT** | | **NAT. GAS Emission Factor** | **COAL Emission Factor** |
|---|---|---|---|
| **B-1** 310 MMBTUH | | 0.00059 lbs/MMBtu (2) | NA |
| **B-2** 440 MMBTUH | Hi Btu Coal (1) | 0.0006 lbs/MMBtu (2) | 0.644 lbs/MMBtu (3) |
| | Lo Btu Coal (1) | NA | 0.386 lbs/MMBtu (3) |
| **B-3** 557 MMBTUH | | 0.0006 lbs/MMBtu (2) | 0.403 lbs/MMBtu (3) |
| **B-4** 557 MMBTUH | | 0.0006 lbs/MMBtu (2) | 0.631 lbs/MMBtu (3) |
| **B-5** 415 MMBTUH | | 0.0006 lbs/MMBtu (2) | NA |
| **PM-11** (24 MMBTUH x 2) | | 0.0006 lbs/MMBtu (2) | NA |
| **PM-12** (16.5 MMBTUH x 2) | | 0.0006 lbs/MMBtu (2) | NA |
| **PM-13** (16.5 MMBTUH x 2) | | 0.0006 lbs/MMBtu (2) | NA |
| **PM-14** (24 MMBTUH x 2) | | 0.0006 lbs/MMBtu (2) | NA |
| **PM-15** (25 MMBTUH x 2) | | 0.0006 lbs/MMBtu (2) | NA |

(1) - Lo Btu coal is sub-bituminous, Hi Btu is bituminous

(2) - AP-42, Table 1.4-2 (7/98)
(3) - Stack tests, conducted on January 7, 8, 9, 2003 for B-2, May 20 & 21, 2003 for B-3, and April 15 & 16, 2003 for B-4.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
This subchapter limits new gas-fired, liquid-fired, and solid fossil fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.20, 0.30, and 0.70 respectively, lbs of $NO_X$ per MMBTU, three-hour average. Only boilers B-1, B-2, B-3, and B-4 exceed the 50 MMBTUH threshold and are subject to these standards. Paper Machine PM-15 has a total heat input rating, all burners combined, of 50 MMBTUH and is also subject. The table below illustrates compliance based on the emission calculations illustrated in the permit memorandum.

| **EMISSION UNIT** | | **COAL Emissions Factor** | **NATURAL GAS Emissions Factor** |
|---|---|---|---|
| **B-1** 310 MMBTUH | | NA | 0.1 lbs [(1)] MMBtu |
| **B-2** 440 MMBTUH | $NO_X$ (Hi Btu Coal) [(3)] | 0.43 lbs [(1)] MMBtu | NA |
| | $NO_X$ (Lo Btu Coal) [(3)] | 0.35 lbs [(1)] MMBtu | NA [(4)] |
| **B-3** 557.11 MMBTUH | | 0.254 lbs [(1)] MMBtu | NA |
| **B-4** 557.11 MMBTUH | | 0.496 lbs [(1)] MMBtu | 0.19 lbs [(2)] MMBtu |
| **B-5** 415 MMBTUH | | NA | 0.137 lbs [(5)] MMBtu |
| **PM-15** 50 MMBTUH | | NA | 0.1 lbs [(2)] MMBtu |

(1) - Permit Limit (BART standard).
(2) -AP-42, Table 1.4-1 (7/98)
(3) -Lo Btu coal is sub-bituminous, Hi Btu is bituminous
(4) – Igniters only
(5) – OAC 252:100-33 limit.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
This subchapter affects gray iron cupolas, blast furnaces, basic oxygen furnaces, petroleum catalytic cracking units, and petroleum catalytic reforming units. There are no affected sources.

OAC 252:100-37 (Volatile Organic Compounds) [Part 3 and Part 7 Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. The two underground 10,000-gallon gasoline tanks installed under Permit No. 75-053-C no longer remain. One aboveground 1,000-gallon gasoline tank is existing at the facility. This tank is equipped with a submerged fill pipe.

Part 5 limits the VOC content of coating used in coating lines or operations. This facility will not normally conduct coating or painting operations except for routine maintenance of the facility and equipment, which is not an affected operation.
Part 7 requires fuel-burning equipment to be operated and maintained so as to minimize VOC emissions. Temperature and available air must be sufficient to provide essentially complete combustion. All fuel-burning equipment at this facility including the boilers, paper machine drying hoods, PO-1 tunnel dryer, and thermal regenerative oxidizer are designed to provide essentially complete combustion of organic materials.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

**The following Oklahoma Air Pollution Control Rules are not applicable to this facility:**

| | | |
|---|---|---|
| OAC 252:100-7 | Permits for Minor Facilities | not in source category |
| OAC 252:100-11 | Alternative Emissions Reduction | not requested |
| OAC 252:100-15 | Mobile Sources | not in source category |
| OAC 252:100-17 | Incinerators | not type of emission unit |
| OAC 252:100-23 | Cotton Gins | not type of emission unit |
| OAC 252:100-24 | Grain Elevators | not in source category |
| OAC 252:100-35 | Carbon Monoxide | not in source category |
| OAC 252:100-39 | Nonattainment Areas | not in area category |
| OAC 252:100-47 | Landfills | not in source category |

## SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable to this Permit]
PSD does not apply to this permit since there are no proposed emission increases above PSD SERs. Future emission increases must be evaluated against the threshold levels of CO - 100 TPY, $NO_X$ - 40 TPY, $SO_2$ - 40 TPY, VOC - 40 TPY, PM - 25 TPY, $PM_{10}$ - 15 TPY, and Lead - 0.6 TPY.

NSPS, 40 CFR Part 60 [Subparts D, Db and Y Applicable]
Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971 (§§60.40-60.46), affects each fossil-fuel-fired steam generating unit more than 73 megawatts heat input rate (250 million Btu per hour). Boilers B-1, B-2, B-3, and B-4 are all rated above this threshold and are therefore affected facilities. §60.42, §60.43, & §60.44 – contain standards for particulate matter, sulfur dioxide, and nitrogen oxides. The standard for particulate matter is 0.10 lbs/MMBtu from fossil fuel or fossil fuel and wood residue with no greater than 20% opacity except for one six-minute period per hour of not more than 27% opacity. The standard for $SO_2$ is 0.8 lbs/MMBtu from liquid fossil fuels and 1.2 lbs/MMBtu from solid fossil fuels. The standard for $NO_X$ is 0.2 lbs/MMBtu from gaseous fossil fuel, 0.30 lbs/MMBtu from liquid fossil fuels, and 0.7 lbs/MMBtu from solid fossil fuels.
Boilers B-2, B-3, and B-4 are permitted to burn coal. All four boilers B-1, B-2, B-3 and B-4 are permitted to burn natural gas as a fuel. At this time, B-2 and B-3 burn natural gas only for igniter purposes. Initial compliance testing for coal combustion was performed for Boilers B-2, B-3, and B-4. Initial compliance testing for B-1 was performed in June 1980.
§60.45 - Contains requirements for calibration, maintenance, and operation of continuous monitoring systems for measuring the opacity of emissions, sulfur dioxide emissions, nitrogen oxides emissions, and either oxygen or carbon dioxide except as provided in paragraph §60.45(b). For a fossil fuel-fired steam generator that does not use a flue gas desulfurization device, a continuous monitoring system for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling and analysis. If the owner or operator demonstrates during the performance test that emissions of nitrogen oxides are less than 70 percent of the applicable standards in §60.44, a continuous monitoring system for measuring nitrogen oxides emissions is not required. If an owner or operator does not install any continuous monitoring systems for sulfur oxides and nitrogen oxides, a continuous monitoring system for measuring either oxygen or carbon dioxide is not required. The facility is required to continuously monitor opacity.
Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978 (§§60.40a - 60.49a), affects each electric utility steam generating unit that is capable of combusting more than 73 megawatts (250 million Btu/hour) heat input of fossil fuel (either alone or in combination with any other fuel) and for which construction or modification is commenced after September 18, 1978. *Electric utility steam generating unit* means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

Boilers B-3 and B-4 were constructed in 1978 and 1981, respectively, but do not meet the definition of *electric utility steam generating unit*. The boilers are therefore not subject to the requirements of this subpart.

Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, affects each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hr).

Boiler B-5 will be subject to this subpart.

Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (§§60.40c - 60.48c), affects each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat input capacity of 29 MW (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). The boilers were constructed prior to the effective date and are rated at greater than 100 MMBtu/hr. The boilers are therefore not subject to the requirements of this subpart.

Subpart Y - "Standards of Performance for Coal Preparation Plants," are applicable to any of the following affected facilities that commenced construction or modification after October 24, 1974, in coal preparation plants which process more than 181 Mg (200 tons) per day: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems.

*Coal preparation plant* means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying. The coal preparation plant does not have thermal dryers, pneumatic coal-cleaning equipment, or coal transfer and loading systems. All other facilities in the coal preparation plant, except the coal pile, are subject to this rule.

*Coal storage system* means any facility used to store coal except for open storage piles. In an Analysis Regarding Regulatory Status of Fugitive Emissions From Coal Unloading at Preparation Plants, dated October 3, 1997, from the EPA to Congresswoman Barbara Cubin, it was noted that "if coal is unloaded for storage, then the unloading activity is not an affected facility under NSPS Subpart Y. The coal must be directly unloaded into receiving equipment, such as a hopper to be subject to the provisions of NSPS Subpart Y." Cited as key phrases in the definition of *Coal processing and conveying equipment* were "equipment used to convey coal to ---------- machinery" and "but is not limited to" (page iii). The second phrase only supports the case of applicability where coal is directly unloaded into receiving equipment. For this facility, where coal is unloaded to a coal pile, the first phrase supports the non-applicability of the rule. Therefore, the coal pile and preceding unloading/conveying equipment are not affected facilities. However, it was also concluded "fugitive emissions from coal dumping at the site of a coal preparation plant must be counted in determining whether a coal preparation plant is a major source subject to the Title V permitting requirements (cover letter). Whether a facility has been regulated as an affected facility does not determine whether fugitive emissions from that facility are to be counted in determining whether the source as a whole is major under TV. Rather, if the facility is part of a source that falls within a source category which has been listed pursuant to section 302(j) of the Act, then all fugitive emissions of any regulated air pollutant from that facility are to be included in determining whether that source is a major stationary source under Section 302 or part D of Title I of the Act and accordingly required to obtain a Title V permit" (page iv).

*Coal processing and conveying equipment* means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts. Therefore, all processes described here are subject to this rule.

Subpart IIII, Stationary Compression Ignition Internal Combustion Engines, affects stationary compression ignition (CI) internal combustion engines (ICE) based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005. Stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines, or are manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006 and stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005 are subject to this subpart. §60.4205 specifies the standards for owners and operators of emergency stationary CI internal combustion engines.

DG-1 and DG-2 drive generators, each producing 1,200 KW which equates to a load of approximately 1,610 horsepower and the 240-horsepower Cummins N-855-F, diesel fire pump were all manufactured and constructed prior to the threshold dates and are therefore not affected under this subpart.

Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines (SI ICE) promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and numerous manufacture dates. Engine manufacturers are required to certify engines to meet the emission standards and may voluntarily certify other engines. An initial notification is required only for owners and operators of engines greater than 500 horsepower that are non-certified. There are no new, modified, or reconstructed engines at this facility. The engines in this facility were manufactured prior to July 12, 2006 and are not subject to this subpart. There are no SI engines at this facility. DG-1 and DG-2 are CI engines.

NESHAP, 40 CFR Part 61 [Potentially Subpart M Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, benzene, beryllium, coke oven emissions, mercury, radionuclides, or vinyl chloride except for small amounts of mercury from the boilers which are covered by NSPS Subpart D.

Subpart M – National Emission Standards for Asbestos. The facility may be subject to certain regulations pertaining to the construction, demolition, and disposal of asbestos-containing materials.

NESHAP, 40 CFR Part 63 [Subparts KK, JJJJ, ZZZZ and DDDDD Applicable]

Subpart S – National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry, affects both new and existing processes that produce pulp, paper, or paperboard located at a major source that use: (1) Kraft, soda, or semi-chemical pulping processes using wood; or (2) Mechanical pulping processes using wood; or (3) Any process using secondary or non-wood fibers. Equipment listed in § 63.444(a) are required to be enclosed and vented into a closed-vent system and routed to a control device. Georgia-Pacific uses secondary wood (recycled paper) fiber and is an affected facility. However, as a result of the processes and bleaching chemicals

used in producing the secondary fiber pulp, the facility is not subject to any of the standards in the subpart.

Subpart KK - National Emission Standards for the Printing and Publishing Industry, applies to each new and existing facility that is a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.2, at which publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses are operated and area sources as outlined in §63.820(a)(2). For product and packaging, affected sources include all of the product and packaging rotogravure or wide-web flexographic printing presses at a facility plus any other equipment at that facility which the owner or operator chooses to include in accordance with paragraph §63.821(a)(3) of this section, except proof presses, and any product and packaging rotogravure or wide-web flexographic press which is used primarily for coating, laminating, or other operations which the owner or operator chooses to exclude under certain provisions listed in this section. The owner or operator of product and packaging rotogravure, or wide-web flexographic printing presses may also elect to include in that affected source stand-alone coating equipment subject to certain provisions listed in this section. The following lists the affected sources:

| EU ID | EU Name | Manufacturer/Model No. | Construct Date |
|---|---|---|---|
| PO-1 | Flexographic Polyethylene Printer #1 | Paper Converting Machine Company (PCMC), Model No. 6795, 6-color w/ vapor collection hood and tunnel dryer | June, 1984 |
| | Flexographic Polyethylene Printer #2 | PCMC* Model No. 6294, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #3 | PCMC* Model No. M-2529, 8-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #4 | PCMC* Model No. 7148, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| FP-1 | Flexographic Paper Printer | Flexo 31-005 – PCMC/Model No. 6992<br>Flexo 31-008 – PCMC/Model No. 7416 | 1990<br>1993 |
| FP-8 | Flexographic Polyethylene Printer | Bretting, 4-color, 78-inch wide | June, 2005 |

Each product and packaging rotogravure or wide-web flexographic printing affected source at a facility that is a major source of HAP, as defined in 40 CFR 63.2, that applies no more than 400 kg per month, for every month, of organic HAP on product and packaging rotogravure or wide-web flexographic printing presses, on and after the applicable compliance date as specified in §63.826 of this subpart is subject only to the recordkeeping requirements of §63.829(e) and reporting requirements of §63.830(b)(1) of this subpart. The owner or operator is required to maintain records of the total volume and organic HAP content of each material applied on product and packaging rotogravure or wide-web flexographic printing presses during each month for five years, and upon request, submit them to the Administrator.

Subpart MM - National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills, applies to each kraft, soda, sulfite, or stand-alone semichemical pulp mill that is a major source of

hazardous air pollutants (HAP) emissions as defined in §63.2. The affected sources are: (1) Each existing chemical recovery system (as defined in §63.861) located at a kraft or soda pulp mill; (2) Each new nondirect contact evaporator (NDCE) recovery furnace and associated smelt dissolving tank(s) located at a kraft or soda pulp mill; (3) Each new direct contact evaporator (DCE) recovery furnace system (as defined in §63.861) and associated smelt dissolving tank(s) located at a kraft or soda pulp mill; (4) Each new lime kiln located at a kraft or soda pulp mill; (5) Each new or existing sulfite combustion unit located at a sulfite pulp mill, except such existing units at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. AP–10); (6) Each new or existing semichemical combustion unit located at a stand-alone semichemical pulp mill; (7) The requirements of the alternative standard in §63.862(d) apply to the hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD 14).

Subpart JJJJ - National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating, applies to each new and existing paper and other web coating operations at facilities that are major sources of HAP, as defined in §63.2, at which web coating lines are operated. Certain requirements apply to all who are subject to this subpart; others depend on the means used to comply with an emission standard.

Per EPA guidance, product and packaging rotogravures and wide-web flexographic presses included as affected sources under subpart KK are not covered by this rule. However, G-P has continuous gluing operations that are not subject to KK but that are subject to this rule.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions.

Existing compression ignition emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions do not have to meet the requirements of this subpart and of subpart A of this part. Therefore Engines DG-1 and DG-2 have no requirements to meet under either of the aforementioned subparts.

The 240-horsepower Cummins N-855-F, diesel fire pump engine is affected and subject to work practices specified in §63.6602 Table 2c including periodic oil changes, inspection of engine components and minimizing engine idle time and startup time.

§63.6655(a)(2), (4), & (5) requires keeping records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment; records of all required maintenance performed on the air pollution control and monitoring equipment; and records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

§63.6655(d) requires records specified in Table 6 (operating and maintaining the stationary RICE according to the manufacturer’s emission-related operation and maintenance instructions; or develop and follow maintenance plan for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions).

§63.6655(e) requires records of the maintenance to demonstrate that the engine and after-treatment control device (if any) was operated and maintained according to the owner’s maintenance plan.

§63.6655(f) requires records of the hours of operation of the engine that is recorded through the non-resettable hour meter, how many hours are spent for emergency operation, including what

classified the operation as emergency and how many hours are spent for non-emergency operation.

Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

Boilers B-2, B-3, and B-4 are existing sources and must comply with the requirements by January 31, 2017. Boiler B-5 will be a new source and must comply with the requirements upon actual start-up. By letter dated March 18, 2015, DEQ granted the facility a one-year extension of the compliance date set forth in 40 CFR 63.7495(b). Accordingly, the facility's compliance date for all requirements is January 31, 2017.

CAM, 40 CFR Part 64 [Not Applicable]

This part applies to any pollutant-specific emission unit at a major source that is required to obtain an operating permit, for any application for an initial operating permit submitted after April 18, 1998, that addresses "large emissions units," or any application that addresses "large emissions units" as a significant modification to an operating permit, or for any application for renewal of an operating permit, if it meets all of the following criteria.

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY

All flexographic polyethylene printers served by the RTO have pre-control emissions of VOC exceeding 100 TPY, therefore they are subject to CAM in this renewal Title V permit, included as Attachment A to the permit. A complete enclosure was constructed around all four presses such that a negative pressure is maintained assuring 100% capture of all VOC. The exhaust gas temperature of the RTO is continuously monitored to ensure that complete oxidation occurs. Because a conservatively low destruction efficiency of 95% for the thermal oxidizer is utilized in demonstrating compliance, it has been concluded that temperature monitoring is the only indicator parameter needed in the CAM plan. Testing performed on January 10, 2007 using EPA Methods 1through 4 and 25A illustrated an efficiency of 98.8%. Based on this, a minimum burner chamber temperature of 1,363 °F been established in the permit and attached CAM plan as a threshold for corrective actions.

Boilers B-2, B-3, and B-4 use control devices to achieve compliance with the particulate matter standards of NSPS Subpart D and OAC 252:100-19. Potential pre-control emissions from these units equal or exceed major source levels (100 TPY of PM). Since NSPS D was proposed prior to November 15, 1990, the boilers are not exempt from CAM. The boilers are also subject to PM limits under NESHAP Subpart DDDDD and will be exempt from CAM upon the compliance date. By letter dated March 18, 2015, DEQ granted the facility a one-year extension of the compliance date set forth in 40 CFR 63.7495(b). Accordingly, the facility's compliance date for all requirements in but not limited to Condition 1.C.i and 40 CFR, Subpart DDDDD is January 31, 2017. The interim CAM plan for Boilers B-3 and B-4 is included as Attachment B to the permit. The interim CAM plan for Boiler B-2 is included as Attachment C to the permit.

B-5 is subject to 40 CFR Subpart Db and also OAC 252:100-33, therefore the first criterion is met. B-5 will utilize low-$NO_X$ burners and flue gas recirculation (FGR) to minimize the formation of $NO_X$ emissions. Part 64 defines "control device" as *equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere. A control device does not include passive control measures that act to prevent pollutants from forming, such as the use of combustion or other process design features or characteristics.* Under the definition of control device, only the FGR is a control device. Pursuant to §64.2(b)(1)(i), "Exempt emission limitations or standards", the requirements of this part do not apply to emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act. Since B-5 is subject Subpart Db, it does not meet the first criteria and is therefore not subject to CAM. Since the B-5 could meet the OAC 252:100-33 standard without the use of FGR, the second criteria is not met and is therefore not subject to CAM as a result of being subject to OAC 252:100-33.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
The emissions units subject to this determination do not process or store more than the threshold quantity of any regulated substance (Section 112r of the Clean Air Act 1990 Amendments). More information on this federal program is available on the web page: www.epa.gov/ceppo.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart F Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).
Subpart A applies to any person that produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product. It identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030. The facility does not conduct any of the affected processes and is therefore not subject to this rule.
Subpart F applies to any person servicing, maintaining, or repairing appliances. This subpart also applies to persons disposing of appliances, including small appliances and motor vehicle air conditioners. In addition, this subpart applies to refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recycling and recovery equipment, approved recycling and recovery equipment testing

organizations, persons selling class I or class II refrigerants or offering class I or class II refrigerants for sale, and persons purchasing class I or class II refrigerants. The purpose of this subpart is to reduce emissions of class I and class II refrigerants and their substitutes to the lowest achievable level by maximizing the recapture and recycling of such refrigerants during the service, maintenance, repair, and disposal of appliances and restricting the sale of refrigerants consisting in whole or in part of a class I and class II ODS in accordance with Title VI of the Clean Air Act.

The facility performs maintenance that involves recycling and recovery of refrigerants. Standard Conditions included in the permit address required work practices to be used during the maintenance, service, repair, or disposal of appliances, leak repair requirements, standards for recycling and recovery equipment, technician certification, and recordkeeping requirements. Additional applicable requirements are found in the rule.

## SECTION IX. COMPLIANCE

### Inspection

Inspections are not required for construction permits.

### Testing

Any post-construction testing, if performed, will be addressed in the operating permit

### Tier Classification and Public Review

This application has been determined to be a **Tier II** based on the request for a significant modification, as described in 252:100-87.2(b)(2)(iv). The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the real property.

The applicant published the "DEQ Notice of Filing a Tier II Permit Application Filing" in the *Muskogee Phoenix*, a daily newspaper, printed and published in Muskogee County, on April 29, 2016. The notice stated that the application was available for public review at the Muskogee Public Library located at 801 W. Okmulgee Ave., Muskogee, Oklahoma, 74401 or at the Air Quality Division's main office located at 707 N. Robinson, Suite 4100, Oklahoma City, Oklahoma. No comments were received on the application.

This site is not within 50 miles of the Oklahoma border. Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page: www.deq.state.ok.us/.

The applicant requests concurrent Public and EPA reviews.

**Fee Paid**

The applicant has paid the required fee of $5,000 for a modification of a major source permit as required by 252:100-8-1.7(2)(B).

## SECTION XI. SUMMARY

There are no active Air Quality compliance or enforcement issues that would affect the issuance of this permit. Issuance of the construction permit is recommended contingent on Public and EPA reviews.

# PERMIT TO CONSTRUCT
# AIR POLLUTION CONTROL FACILITY
# SPECIFIC CONDITIONS

**Georgia-Pacific Consumer Products LP** **Permit No. 2010-278-C (M-3)**
**Muskogee Mill**

The permittee is authorized to construct in conformity with the specifications in the application for a construction permit received on April 15, 2016, the revised application submitted on July 20, 2016, and supplemental information submitted by e-mail on October 31, December 16 and 22, 2016 and January 20, 23, 26 and 27, 2017. The Evaluation Memorandum dated January 27, 2016, explains the derivation of applicable permit requirements and the estimates of emissions, however, it does not contain operating limitations or permit requirements. Commencement of construction or continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein.

1. Points of emission and emissions limitations.

[Permit No. PSD-OK-404], [OAC 252:100-8-6(a)(1)]

Where two emission limits with different bases are given for a single emission point and pollutant, the source shall not exceed either limit at any time.

**EUG 1 – Boilers**

**Table 1**

| EU ID | Manufacturer & Serial Number | Fuels | Controls | Construct Date |
|---|---|---|---|---|
| **B-1** | Zurn | Gas | None | 1975 |
| **B-2** | Babcock & Wilcox | Coal/Gas | Electrostatic Precipitator | 1975 |
| **B-3** | Combustion Engineering | Coal/Gas | Baghouse Filter | 1978 |
| **B-4** | Riley | Coal/Gas | Baghouse Filter | 1981 |
| **B-5** | Rentech | Gas | None | Pending 2016 |

Boiler B-5 is subject to the following emissions limits. B-5 is not considered to be operational until after a reasonable shakedown period, not to exceed 180 days. Emissions from Boiler B-5 during shakedown shall not count toward meeting any permit limits. At that time, Boiler B-2 shall be permanently taken out of service and any permit requirements concerning B-2 are null and void.

| B-5 415 MMBTUH | Emissions (lbs/hr) | Emissions (TPY) |
|---|---|---|
| PM | 3.1 | 14 |
| $NO_X$ | 83 | 360 |
| $SO_2$ | 0.2 | 1 |
| VOC | 2.2 | 9.8 |
| CO | 20 | 90 |

A. Boilers **B-1**, **B-2**, **B-3**, **B-4**. [40 CFR, 60, Subpart D]

Boilers B-1, B-2, B-3 and B-4 are subject to Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971. The permittee shall comply with all applicable requirements including, but not limited to the following.

§60.41 Definitions.
§60.42 Standard for particulate matter (PM).
§60.43 Standard for sulfur dioxide ($SO_2$).
§60.44 Standard for nitrogen oxides ($NO_X$).
§60.45 Emissions and fuel monitoring.
§60.46 Test methods and procedures.

Compliance with the emission limits specified in this permit shall be demonstrated by the initial testing requirements of 40 CFR Part 60 Subpart D, upon the first firing of each fuel. These requirements have been met for firing natural gas in Boiler B-1 and for firing coal in Boilers B-2, B-3, and B-4.

i. Except as provided by Specific Condition 2.A., the permittee shall notify the permitting authority in writing upon firing of the permitted alternate fuel within thirty (30) days of such action and include the estimated date of demonstration of compliance as required in the specific conditions.
ii. Except as provided by Specific Condition 2.A., the permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within sixty (60) days after the complete testing.

[General Conditions, Permit No. PSD-OK-404]

B. Boiler **B-5**. [40 CFR, 60, Subpart Db]

The facility is subject to Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, steam generating units that commenced construction, modification, or reconstruction after June 19, 1984, and that have a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hr). The permittee shall comply with all applicable requirements including, but not limited to the following.

§60.40b Applicability and delegation of authority.
§60.41b Definitions.
§60.42b Standard for sulfur dioxide ($SO_2$).
§60.43b Standard for particulate matter (PM).
§60.44b Standard for nitrogen oxides ($NO_X$).
§60.45b Compliance and performance test methods and procedures for sulfur dioxide.
§60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.
§60.47b Emission monitoring for sulfur dioxide.
§60.48b Emission monitoring for particulate matter and nitrogen oxides.
§60.49b Reporting and recordkeeping requirements.

C. Boilers **B-1**, **B-2**, **B-3**, **B-4, B-5**. [40 CFR 63, Subpart DDDDD], [Permit No. 99-113-C (M-4) PSD]

i. The facility shall comply with all applicable requirements of 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters including, but not limited to the following.

§63.7480 What is the purpose of this subpart?
§63.7485 Am I subject to this subpart?
§63.7490 What is the affected source of this subpart?
§63.7491 Are any boilers or process heaters not subject to this subpart?
§63.7495 When do I have to comply with this subpart?
§63.7499 What are the subcategories of boilers and process heaters?
§63.7500 What emission limitations, work practice standards, and operating limits must I meet?
§63.7501 Affirmative Defense for Violation of Emission Standards During Malfunction.
§63.7505 What are my general requirements for complying with this subpart?
§63.7510 What are my initial compliance requirements and by what date must I conduct them?
§63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?
§63.7520 What stack tests and procedures must I use?
§63.7521 What fuel analyses, fuel specification, and procedures must I use?
§63.7522 Can I use emissions averaging to comply with this subpart?
§63.7525 What are my monitoring, installation, operation, and maintenance requirements?
§63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?
§63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?
§63.7535 Is there a minimum amount of monitoring data I must obtain?
§63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?
§63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?
§63.7545 What notifications must I submit and when?
§63.7550 What reports must I submit and when?
§63.7555 What records must I keep?
§63.7560 In what form and how long must I keep my records?
§63.7565 What parts of the General Provisions apply to me?
§63.7570 Who implements and enforces this subpart?
§63.7575 What definitions apply to this subpart?

Table 2 to Subpart DDDDD of Part 63—Emission Limits for Existing Boilers and Process Heaters
Table 3 to Subpart DDDDD of Part 63—Work Practice Standards
Table 4 to Subpart DDDDD of Part 63—Operating Limits for Boilers and Process Heaters
Table 5 to Subpart DDDDD of Part 63—Performance Testing Requirements
Table 6 to Subpart DDDDD of Part 63—Fuel Analysis Requirements
Table 7 to Subpart DDDDD of Part 63—Establishing Operating Limits
Table 8 to Subpart DDDDD of Part 63—Demonstrating Continuous Compliance
Table 9 to Subpart DDDDD of Part 63—Reporting Requirements
Table 10 to Subpart DDDDD of Part 63—Applicability of General Provisions to Subpart DDDDD
Table 11 to Subpart DDDDD of Part 63—Toxic Equivalency Factors for Dioxins/Furans

ii. By letter dated March 18, 2015, DEQ granted the facility a one-year extension of the compliance date set forth in 40 CFR 63.7495(b) for existing Boilers B-1, B-2, B-3 and B-4. Accordingly, the facility's compliance date for all requirements in, but not limited to, Condition 1.C.i above and 40 CFR, Subpart DDDDD is January 31, 2017.

iii. Total $SO_X$ emissions from Boilers B-1, B-2, B-3, B-4 and B-5 shall not exceed 36,460 pounds per day. Emissions shall be calculated based on actual fuel consumption and emissions factors identified in development of the Part 70 Permit for the facility, as indicated in the following table, or shall be taken from continuous emission monitors.

**Table 3**

| Unit | Fuel type | Emission factor |
|---|---|---|
| B-1, B-2, B-3, B-4 | Natural gas | 0.6 lbs/MMSCF* |
| B-2 | High BTU coal | 0.644 lbs/MMBTU** |
| B-2 | Low BTU coal | 0.386 lbs/MMBTU** |
| B-3 | Coal | 0.403 lbs/MMBTU** |
| B-4 | Coal | 0.631 lbs/MMBTU** |
| B-5 | Natural Gas | 0.6 lbs/MMSCF* |

*Assumes 1,020 BTU/CF
**Based on the heating value of the coal used.

D. Additional limitations for Boiler **B-4**. [Permit No. PSD-OK-404]

i. Compliance with the emission limits of this condition shall be demonstrated by test methods and procedures as set forth in 40 CFR Part 60 Appendix A; Method 7, Determination of nitrogen oxide emissions from stationary sources; Method 10, Determination of carbon monoxide emissions from stationary sources; and Method 9, Visual determination of the opacity of emissions from stationary sources. Initial testing requirements have been met for firing coal. Initial testing requirements for natural gas are triggered by the time frames set forth in Specific Condition 2.A.iii.

| Table 4 - Permit No. PSD-OK-404 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **EU** | **Fuels** | **$NO_X$** | **CO** | **$SO_2$** | **PM** | **VOC** | **Opacity** |
| **B-4** | Coal (lb/hr) | 389.98 | 32.37 | 668.53 | 55.71 | 9.71 | 10% |
| | Coal (lb/MMBtu) | 0.7 | 0.06 | 1.2 | 0.10 | 0.017 | |
| | Gas (lb/hr) | 111.4 | 46.8 | 0.4 | 2.8 | 3.3 | No Visible |
| | Gas (lb/MMBtu) | 0.2 | 0.084 | 0.001 | 0.005 | 0.006 | Emissions |

ii. Ongoing compliance with the limits specified in Table 4 shall be demonstrated by compliance with Specific Condition Nos. 3.E., F., H. and I.

**EUG 2 – Combustion Sources**

| Table 5 | | | | |
|---|---|---|---|---|
| **EU ID** | **Manufacturer & Serial Number** | **Fuels** | **Construct Date** | **Burner Replace** |
| PM-11 | Kinedizer 27M | Gas/Propane | 1975 | 1999 |
| PM-12 | Oven-Pak EB6 Model 400 | Gas/Propane | 1975 | 2003 |
| PM-13 | Oven-Pak EB6 Model 400 | Gas/Propane | 1979 | 2002 |
| PM-14 | Combustifume | Gas | 1981 | 2015 |
| PM-15 | LV-85 | Gas | 1992 | NA |
| PO-1 | Eclipse (4 presses)<br>4 x 3.2 MMBTUH | Gas | 1984,<br>2006 &<br>2014 | NA |
| PO-1 | Regenerative Thermal Oxidizer,<br>Durr, Model RL 60,<br>9.6 MMBTUH | Gas | 2006 | NA |

NA – Not applicable

| Table 6 - All Paper Machines – OAC 252:100-25 & 31 Standards | | |
|---|---|---|
| | **Opacity** | **$SO_2$ (lbs/MMBTU)** |
| Natural Gas | 20/60 | 0.20 |

| Table 7 – Paper Machine 15 OAC 252:100-33 Standards | |
|---|---|
| | **$NO_X$ (lbs/MMBTU)** |
| Natural Gas | 0.20 |

| Table 8 - Permit No. 99-113-C (M-4) PSD | | | | | |
|---|---|---|---|---|---|
| | **$SO_2$ TPY** | **$PM_{10}$ TPY** | **VOC TPY** | **$NO_X$ TPY** | **CO TPY** |
| PO-1 | 0.02 | 0.31 | 0.23 | 4.21 | 3.5 |

Table 8 reflects only the RTO, since the tunnel dryers are Insignificant activities.

iii. Compliance for Table 8 is demonstrated by calculating emissions using fuel consumption and AP-42 factors.

E. Additional limitations for Boiler **B-1**. [OAC 252:100-8-6(a)], [40 CFR, 51, Appendix Y]

Permittee shall implement the requirements of this permit condition within five (5) years of EPA's approval of DEQ's Regional Haze SIP submitted in 2010. Emissions of $NO_X$ from Boiler B-1 shall be limited to no more than 744 lbs/day on a 30-day rolling average. Initial compliance with this limit was demonstrated by initial stack testing. Continuous compliance shall be demonstrated by monitoring fuel consumption at least daily using the existing fuel meter and calculating a 30-day rolling average.

F. Additional limitations for Paper Machine **PM-15**. [Permit No. 91-127-O (M-1)]

| **Table 9** | | |
|---|---|---|
| **EU ID** | **$NO_X$ (TPY)** | **CO (TPY)** |
| PM-15 | 26.28 | 18.40 |

i. Compliance for Table 9 is demonstrated by calculating emissions using fuel consumption and AP-42 factors.

**EUG 3 – Coal Preparation Plant**

| **Table 10** | | | |
|---|---|---|---|
| **EU Name** | **Manufacturer/Model#** | **Construct Date** | **Subject to 40 CFR 60 Subpart Y** |
| Railcar Unloading | FEECO | 1991, est. | No |
| Radial Stacker | FEECO | 1991, est. | No |
| FS-1 Coal Pile | Open Pile – No Model# | 1975 | No |
| Grizzly Feeder | FEECO / Fairfield | 1991, est. | Yes |
| Coal Sizer/Crusher | Gundlach / Model#56-DA-1294 | 1977, est. | Yes |
| Conveyor | Manufactured on-site by Fort Howard | 1977, est. | Yes |
| B-2 Coal Bunkers | B&W | 1975, est. | Yes |
| B-2 Coal Feeders | Stock Equipment Co./ Gravimetric Feeder | 1975, est. | Yes |
| B-2 Pulverizers | #493 C-E Raymond Bowl Mill | 2008 | Yes |
| B-3 Coal Bunkers | CE | 1978, est. | Yes |
| B-3 Coal Feeders | Stock Equipment Co. / Gravimetric Feeder | 1978, est. | Yes |
| B-3 Pulverizers | CE / Bowl Mill 533ARB | 1978, est. | Yes |
| B-4 Coal Bunkers | Riley | 1981, est. | Yes |
| B-4 Coal Feeders | Merrick / Coalometer | 1981, est. | Yes |
| B-4 Pulverizers | Riley / 556 Hammer Mill | 1981, est. | Yes |

G. **Coal Preparation Plant.** [40 CFR 60 Subpart Y]

i. The facility shall comply with all applicable requirements of 40 CFR 60, Subpart Y, Standards of Performance for Coal Preparation Plants, including but not limited to the following.

§60.250 Applicability and designation of affected facility.
§60.251 Definitions.
§60.254 Standards for coal processing and conveying equipment, coal storage systems, transfer and loading systems, and open storage piles.
§60.255 Performance tests and other compliance requirements.
§60.256 Continuous monitoring requirements.
§60.257 Test methods and procedures.
§60.258 Reporting and recordkeeping.

ii. The initial performance testing requirements to demonstrate compliance with the opacity standards were completed and the standards were met.

H. **EUG 4 - PP-1 Pulp Processing Units (Subpart S Affected/No Applicable Standards)**

i. Pollutants authorized from this EUG are listed in EUG 6. These units are affected facilities under 40 CFR Part 63, Subpart S, National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry. No standards in the subpart currently apply to the facility.
ii. The permittee shall not conduct kraft, soda, sulfite, or semi-chemical pulping processes using wood.
iii. The facility shall not use chlorine or chlorine dioxide to bleach pulp. The use of these bleaching agents shall make the facility subject to the standards of 40 CFR Part 63, Subpart S and require submittal of an application for a permit modification.
iv. The facility is subject to the emissions limitations and standards specified in EUG 6 of this permit.

**EUG 5 – 40 CFR 63 Subpart KK, Flexographic Printing**

**Table 11**

| EU ID | EU Name | Manufacturer/Model No. | Construct Date |
|---|---|---|---|
| PO-1 | Flexographic Polyethylene Printer #1 | Paper Converting Machine Company (PCMC), Model No. 6795, 6-color w/ vapor collection hood and tunnel dryer | 1984 |
| | Flexographic Polyethylene Printer #2 | PCMC* Model No. 6294, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #3 | PCMC* Model No. M-2529, 8-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #4 | PCMC* Model No. 7148, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| FP-1 | Flexographic Paper Printer | Flexo 31-005 – PCMC/Model No. 6992<br>Flexo 31-008 – PCMC/Model No. 7416 | 1990<br>1993 |
| FP-8 | Flexographic Printer | Bretting, 4-color, 78-inch wide | 2005 |

I. All presses, **Subpart KK Flexographic Printing**. [40 CFR 63 Subpart KK]

i. The facility shall comply with all applicable requirements of Subpart KK - National Emission Standards for the Printing and Publishing Industry including, but not limited to the following.

§63.820 Applicability.
§63.821 Designation of affected sources.
§63.822 Definitions.
§63.829 Recordkeeping requirements.
§63.830 Reporting requirements.

ii. The application of organic HAP on product and packaging rotogravure or wide-web flexographic printing presses is limited to no more than 400 kg per month, for every month.

iii. EUG 5 is subject to only the recordkeeping requirements of §63.829(e) and reporting requirements of §63.830(b)(1) of this subpart. The owner or operator is required to maintain records of the total volume and organic HAP content of each material applied on product and packaging rotogravure or wide-web flexographic printing presses during each month, to maintain these records for five years, and upon request, submit them to the Administrator.

**EUG 6 – VOC Sources**

**Table 12**

| EU ID | EU Name | Manufacturer/Model# | Construct Date |
|---|---|---|---|
| PP-1 | Pulp Processing Units | All components listed below under PP-1 Pulp Processing Units | 1975-1992 |
| PM-11 | Paper Machine #11 | KMW | 1975 |
| PM-12 | Paper Machine #12 | KMW | 1975 |
| PM-13 | Paper Machine #13 | KMW | 1979 |
| PM-14 | Paper Machine #14 | Beloit | 1981 |
| PM-15 | Paper Machine #15 | Beloit | 1992 |
| | Paper Machine Additives | NA | |
| SC-1 | Solvent Cleaning PM-11, PM-12, PM-13, PM-14, PM-15 | NA | 1975 |
| PO-1 | Flexographic Polyethylene Printer #1 | Paper Converting Machine Company (PCMC), Model No. 6795, 6-color w/ vapor collection hood and tunnel dryer | June, 1984 |
| | Flexographic Polyethylene Printer #2 | PCMC* Model No. 6294, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #3 | PCMC* Model No. M-2529, 8-color w/ vapor collection hood and tunnel dryer | 2006 |
| | Flexographic Polyethylene Printer #4 | PCMC* Model No. 7148, 6-color w/ vapor collection hood and tunnel dryer | 2006 |
| FP-1 | Flexographic Paper Printers | Flexo 31-005 – PCMC/Model No. 6992<br>Flexo 31-008 – PCMC/Model No. 7416 | 1990<br>1993 |

| Table 12 | | | |
|---|---|---|---|
| **EU ID** | **EU Name** | **Manufacturer/Model#** | **Construct Date** |
| FP-8 | Flexographic Printer | Bretting, 4-color, 78-inch wide | 2005 |

**PP-1 Pulp Processing Units**

| Table 13 | |
|---|---|
| **EU Name** | **Construct Date** |
| Stock Blend Tanks | 1975 & 1983, est. |
| Flotation Cell Washers | 1975, 1979, 1981, 1983, & 1992, est. |
| Bleached Washers | 1975, est., 1975, 1981, 1983, 1992, est. |
| Bleach Towers | 1975, 1979, 1981, 1983, 1992, est. |
| Thickeners | 1975, 1979, 1981, 1983, est., & 1992, est. |
| Stock Presses | 1992, est. |

J. **Paper Machine Additives PM-11**, **PM-12**, **PM-13**, **PM-14,** and **PM-15** and **SC-1 Solvent Cleaning**. [Permit No. 99-113-C (M-4) PSD]

i. Emissions from Paper Machine Additives are emissions from VOC-containing paper enhancement chemicals including dyes, softness aids, and biocides. Emissions of VOCs from the use of paper machine additives shall not exceed 202 TPY, 12-month rolling cumulative, based on the permittee's fiscal month accounting basis.
ii. Emissions of VOCs from paper printing and solvent cleaning of Paper Machines PM-11, PM-12, PM-13, PM-14, and PM-15 shall not exceed 787 TPY, 12-month rolling cumulative, based on the permittee's fiscal month accounting basis.
iii. Emissions shall be calculated based on the total VOC content of each additive or cleaner material used and a 100% release factor.

K. Paper printers **FP-1** and **FP-8** and Polyethylene printers (4) **PO-1**.
[Permit Nos. 83-062-O (PSD), 99-113-TV & 99-113-C (M-4) PSD]

i. Total emissions of VOCs from Paper printers **FP-1** and **FP-8** is limited to 92.28 TPY, rolling 12-month cumulative. Emissions calculations shall be based on mass balance, considering the VOC content of the inks.
ii. Total VOC emissions from the Polyethylene printers (all 4) **PO-1** and platemaking shall not exceed a cumulative of 48.6 tons per year based on a 12-month rolling cumulative period.
iii. Polyethylene printers (**PO-1)** shall be contained in a 100% enclosure, as specified by EPA Reference Method 204, that routes all emissions to a regenerative thermal oxidizer with a minimum 95% destruction efficiency.

L. **PP-1 Paper Pulping**. [Permit No. 99-113-C (M-4) PSD]

i. Total combined VOC emissions from the pulp processing systems shall not exceed 127 TPY.

ii. Compliance with the VOC limits for emissions from the pulping systems shall be based on the total combined finished pulp stock, 12-month rolling cumulative, using the permittee's fiscal month accounting basis, and the emission factor of 0.45 lbs/ton finished pulp stock.

**EUG 7 – Non-Combustion PM Sources Not Subject to NSPS or NESHAP**

| Table 14 | | | |
|---|---|---|---|
| **EU ID** | **EU Name** | **Manufacturer/Serial #** | **Construct Date** |
| PM-11 | Paper Machine #11 | KMW | 1975 |
| PM-12 | Paper Machine #12 | KMW | 1975 |
| PM-13 | Paper Machine #13 | KMW | 1979 |
| PM-14 | Paper Machine #14 | Beloit | 1981 |
| PM-15 | Paper Machine #15 | Beloit | 1992 additional particulate control installed 11/2014 |

| Table 15 - Permit Nos. 99-113-TV, 99-113-C (M-12) & OAC 252:100-25 | | | | | |
|---|---|---|---|---|---|
| **EU ID** | **EU Name** | **Control** | **PM Emissions (TPY)** | **$PM_{10}$ Emissions (TPY)** | **$PM_{2.5}$ Emissions (TPY)** |
| PM-11 | Paper Machine #11 | None | NA | 9.31 | NA |
| PM-12 | Paper Machine #12 | None | NA | 13.03 | NA |
| PM-13 | Paper Machine #13 | None | NA | 11.17 | NA |
| PM-14 | Paper Machine #14 | None | NA | 11.17 | NA |
| PM-15 | Building Vents and Reel Section Dust Collection System | Scrubber | NA | 10.29 | NA |
| | Winder Section Dust Collection and Control System | Scrubber | 9.82 | 9.82 | 9.82 |

M. Paper Machines **PM-11, PM-12, PM-13, PM-14, and PM-15.**

i. Total combined annual throughput of dry finished paper shall not exceed 538,845 ADT (air-dried tons) per year, based on a 12-month rolling cumulative basis, using the permittee's fiscal month accounting basis.

N. **EUG 8 -** Emergency Engines **DG-1, DG-2, DFP-1**

i. The following combustion engines are affected under 40 CFR 63, Subpart ZZZZ, but at this time there are no requirements for DG-1 or DG-2. DFP-1 is subject only to Work Practice requirements.

**EUG 8 -** Emergency Engines **DG-1, DG-2, DFP-1**

| Table 16 | |
|---|---|
| DG-1 | 1,200 KW generator - Marathon Electric, Magna One, Model# 683 FDR8126GG W, Serial # LM-93152-11/20, w/ Caterpillar engine, Serial# 24Z00501 |

| Table 16 | |
|---|---|
| DG-2 | 1,200 KW generator - Marathon Electric, Magna One, Model# 683 FDR8126GG W, Serial # LM-93152-11/13, w/ Caterpillar engine, Serial# 24Z00499 |
| DFP-1 | 240-horsepower Cummins N-855-F, diesel fire pump |

ii. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) for Stationary Reciprocating Internal Combustion Engines (RICE), Subpart ZZZZ, for each affected engine including but not limited to the following. [40 CFR 63 Subpart ZZZZ]

§63.6580 What is the purpose of subpart ZZZZ?
§63.6585 Am I subject to this subpart?
§63.6590 What parts of my plant does this subpart cover?
§63.6595 When do I have to comply with this subpart?
§63.6600 What emission limitations and operating limitations must I meet?
§63.6605 What are my general requirements for complying with this subpart?
§63.6625 What are my monitoring, installation, operation, and maintenance requirements?
§63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?
§63.6635 How do I monitor and collect data to demonstrate continuous compliance?
§63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?
§63.6655 What records must I keep?
§63.6660 In what form and how long must I keep my records?
§63.6665 What parts of the General Provisions apply to me?
§63.6670 Who implements and enforces this subpart?
§63.6675 What definitions apply to this subpart?

2. Testing requirements. [OAC 252:100-8-6(a)(1)], [OAC 252:100-43]

A. Initial testing requirements for **Boiler B-4.**

[40 CFR 60 Subpart D], [Permit No. PSD-OK-404]

i. During the initial performance test, sulfur dioxide, particulate matter, and volatile organic compound testing will not be required by the permitting authority while firing natural gas.

ii. Permittee shall be exempt from initial performance testing while firing gas until such time that the emission points actually begin firing this fuel. Boiler B-4 has only fired gas through the igniters. Testing for gas firing will not be required until the load burners are operated for the time frames set forth in Specific Condition 2.A.iii.

iii. The permittee shall conduct the required performance testing, within 60 days from the time Boiler B-4 has been fired with gas for a total period of 96 cumulative hours, in conformance with the Specific and General Conditions of this permit.

The permittee shall be allowed an additional mechanical checkout period not exceeding 16 hours in length.

iv. Should any combustion equipment modifications be made such as different type burners, combustion air relocation, fuel conversion, tube removal or addition, etc., then emission correlations as described in the attachment to Permit No. PSD-OK-404 titled "Use Of Flue Gas Oxygen Meter As BACT For Combustion Controls," and/or 40 CFR 60 Subpart D, or more recently published and accurate EPA methodology shall be conducted within 60 days of attaining full operation after such modification. The permittee shall be exempt from this requirement and the requirement to install a continuous recording flue gas oxygen monitor if initial nitrogen oxide performance testing demonstrates less than 70% of the applicable nitrogen oxide standard in accordance with 40 CFR Part 60.45 (b)(3) and (4). This exemption was met for firing coal. Results of all emission determinations shall be sent to AQD within 60 days after completion of the test.

B. Periodic testing requirements for Boilers B-1, B-2, B-3, and B-4. [OAC 252:100-43] Boilers having continuous emissions monitoring (CEMS) systems for a pollutant shall not be required to perform stack testing for that pollutant under this permit condition. This requirement will not apply to B-2 once it is out of service.

i. $NO_X$ Testing. At least once every calendar year while the boilers are fired on coal, the permittee shall conduct performance testing for emissions of $NO_X$ and furnish a written report to the AQD. Any $NO_X$ testing done within 365 days prior to issuance of the permit that is done in accordance with EPA approved methods will be accepted as the first annual test. If a boiler is fired on natural gas, testing frequency may be once every other year. Boiler B-1 and Boiler B-5 fire only natural gas. Since Boiler B-5 will be equipped with a $NO_X$ CEMS, it will not be required to perform $NO_X$ stack testing under this permit condition. Boiler B-4 is not considered to be firing natural gas until meeting the initial testing requirement in Condition 2.A.iii. If a boiler is fired on a combination for fuels, testing frequency may be prorated based on the MMBtu of each fuel used. Testing done to satisfy a federal rule such as NESHAP DDDDD will satisfy this requirement.

ii. $PM_{10}$ Testing - B-2, B-3, and B-4. At least every five years or during the term of the permit, permittee shall conduct performance testing for emissions of $PM_{10}$ and furnish a written report to the AQD. Any $PM_{10}$ testing done within 365 days prior to issuance of the permit that is done in accordance with EPA approved methods will be accepted as meeting this requirement for this permit. Boiler B-4, having a more stringent PSD limit when fired on natural gas, is not required to test for PM, again noting that B-4 is not considered to be firing natural gas until meeting the initial testing requirement in Condition 2.A.iii. Boiler B-2 will be shut down in 2017.

iii. Testing shall be conducted while the unit is being operated under representative conditions. A sampling protocol and notification of testing date(s), including proposed frequency proration, shall be submitted at least 30 days in advance of commencement of

testing. Testing shall be conducted using the most recent EPA approved reference methods.

3. Monitoring Requirements. [OAC 252:100-31 & 100-43], [40 CFR 60 Subpart D], [Permit Nos. 75-053-C&O, 77-076-C&O, 79-021-C&O, 81-066-C&O, 81-081-C&O, 83-062-O (PSD), PSD-OK-404, and 91-127-O (M-1)], [EPA Letters dated April 9 and May 7, 1987], [Specific and General Conditions, Permit No. PSD-OK-404]

Continuous monitors. Infrequent, short durations of downtime due to malfunction, weather related outages, etc. shall not constitute a permit deviation as long as the total duration does not exceed 5% of the six-month monitoring period. This also includes process monitors such as CEMS, baghouse pressure drop, ESP status, opacity, oxygen concentration, etc.

Fuel Standards. Fuel standards to ensure continued compliance with the applicable permit limit are taken from the applicable permit and/or the permit application as submitted by the applicant to meet compliance with applicable air quality standards at the time of permit issuance. Fuel-burning equipment fired on natural gas shall be fired with pipeline natural gas as defined in Part 72 having 0.5 grains/100 scf or less total sulfur.

A. Boilers **B-1 and B-5**.
   i. Boilers B-1 and B-5 shall be fired with only natural gas.

B. Paper Machines **PM-11**, **PM-12**, **PM-13**, **PM-14** and **PM-15**.
   i. Paper Machines PM-14 and PM-15 shall burn only commercial-grade natural gas.
   ii. The use of propane as backup fuel is authorized for Paper Machines PM-11, PM-12, and PM-13.

C. **PO-1** Flexographic Polyethylene Printing Press Tunnel Dryers and Regenerative Thermal Oxidizer.
[Permit Nos. 83-062-O (PSD) & 99-113-C (M-4) PSD]

   i. The tunnel dryers and regenerative thermal oxidizer shall be fueled only with commercial pipeline-grade natural gas.
   ii. The exhaust gas temperature from the Regenerative Thermal Oxidizer shall be continuously monitored by a shutdown switch that will shut down the affected printers should the burner chamber temperature drop below 1,363 °F.

D. Emergency Generator units **DG-1** and **DG-2**.
   i. Emergency Generator units **DG-1** and **DG-2** shall be fired on diesel fuel.

Fuel Sampling & Analyses

E. Boilers **B-2, B-3, & B-4.**

i. Coal shall be sampled and analyzed to provide a gross sample representative of the fuel consumed during a boiler operating day.

ii. Coal shall be analyzed for sulfur and ash content and gross calorific value using the most recent ASTM methods. Coal shall be analyzed on a dry basis using the most recent ASTM method for moisture analysis.

iii. Either the fuel supplier's certification or analyses shall be accepted by AQD. Additional testing and/or monitoring to confirm the accuracy of any data from the fuel supplier may be required at the discretion of AQD.

iv. These data may be used, at the discretion of the permitting authority, to determine violations of the emission limitations. Records of the test results of each sample shall be made available for inspection by the permitting authority for at least five years.

Continuous Opacity Monitoring.

F. **Boilers B-1, B-2, B-3, and B-4**. [Permit No. 77-076-C], [40 CFR 60 Subpart D] [EPA Letters dated April 9 and May 7, 1987], [Specific and General Conditions, Permit No. PSD-OK-404]

i. The permittee is required to have installed, and to maintain and operate a continuous opacity monitoring system as required by §60.45, for Boilers B-2, B-3, and B-4, for the firing of coal. Boiler B-1 fires only natural gas and was not required to install opacity monitoring. As allowed by 60.45(b)(7), B-1 is also exempted from periodic visual opacity monitoring requirements.

G. **Coal Preparation Plant & FS-1** Coal Pile. [OAC 252:100-25-3, 29, & 43],

The permittee shall utilize all wet suppression equipment, e.g., "spray-bars", on the conveyors preceding the coal-pile whenever necessary to meet the opacity standards of OAC 252:100-25 while coal is being unloaded and/or transferred to the coal-pile. A visual inspection of the wet suppression equipment shall be completed at least once monthly. Quarterly, the permittee shall conduct, during the daylight hours, the following test for each specified emission point associated with unloading, e.g., drop-point from the train, associated conveyors, and coal-pile radial stacker.

i. The permittee shall conduct an EPA Method 9 visual observation of emissions from the railcar unloading and the radial stacker. In no case shall the observation period for the Method 9 be less than six minutes in duration.

(1) When two consecutive quarterly Method 9 observations show less than 20% opacity, the frequency may be reduced to semi-annual Method 9 observations. Likewise, when two semi-annual Method 9 observations show less than 20% opacity, the frequency may be reduced to annual Method 9 observations. Upon any determination of opacity greater than 20%, the Method 9 observation frequency shall revert to quarterly.

(2) If opacity is greater than 20% for any observation point using the Method 9, then the permittee shall take immediate corrective actions to reduce the opacity. Following implementation of corrective actions, a Method 9 observation shall be

conducted at the affected emission point(s) to document whether the corrective actions were successful. If the Method 9 observation(s) following implementation of corrective actions is(are) still greater than 20% opacity, then for each affected emission point, the permittee shall conduct an additional Method 9 observation during the same 60-minute period and, if possible before nightfall, two additional Method 9 observation(s), for the next two hours in accordance with 40 CFR Part 60, Appendix A, Method 9; except that if any of the additional Method 9 observations 60% opacity, the Method 9 testing may be terminated and the owner or operator shall comply with the provisions of OAC 252:100-9 for excess emissions during start-up, shutdown, and malfunction of air pollution control equipment. In no case shall the observation period for the Method 9 be less than six minutes in duration.

(3) Permittee may continue with whatever reduced observation frequencies were achieved prior to issuance of this renewal permit.

Equipment Standards. [OAC 252:100-43]

H. Baghouses - Boilers **B-3 and B-4.**

The permittee shall develop and implement an operation and maintenance (O&M) manual for the baghouses. At a minimum the plan shall contain the following provisions.

i. Method for determining and documenting the time the baghouses are operational (e.g., when there is flow through the baghouses) and when the baghouses are bypassed.

ii. Method for determining and documenting good operation that specifically addresses bag leaks. A maximum opacity action level representing "good operating conditions" shall be established using the most appropriate of the following:

(1) the most recent performance test data;
(2) manufacturer's recommendations;
(3) engineering calculations;
(4) operator knowledge; and/or
(5) historical data

The permittee shall record any exceedance outside the established opacity action level and take immediate corrective action to return the affected baghouse to good operating conditions.

iii. Method for determining and documenting good operation that specifically addresses improper bag dust accumulation.

iv. Description of scheduled baghouse maintenance activities.

v. Description of baghouse recordkeeping activities.

I. Electrostatic Precipitator (ESP) – Boiler **B-2** [OAC 252:100-43]

This condition shall become null and void once Boiler B-2 is taken out of service.

i. A maximum opacity action level shall be established using the most appropriate of the following:

(1) the most recent performance test data;
(2) manufacturer's recommendations;
(3) engineering calculations;

(4) operator knowledge; and/or
(5) historical data.

Permittee shall continuously monitor field operational status and opacity for increasing trends in opacity caused by potential malfunctions of the ESP. In the event of a maximum opacity action level exceedance, the permittee shall verify that the electrostatic precipitator is properly functioning. The permittee shall record any exceedance outside the established opacity action level and take immediate corrective action to return the electrostatic precipitator to good operating conditions.

ii. The permittee shall develop and implement an operation and maintenance (O&M) manual for the electrostatic precipitator for determining and documenting good operation. At a minimum the plan shall contain the following provisions.
(1)The maximum opacity action level(s) for opacity.
(2)Improper dust accumulation.
(3)A description of scheduled electrostatic precipitator maintenance activities.
(4)A description of electrostatic precipitator recordkeeping activities.

Compliance Assurance Monitoring.

J. All printers served by the RTO have pre-control emissions of VOC exceeding 100 TPY, therefore they are subject to CAM in this renewal Title V permit, attached and incorporated as Appendix A. [40 CFR 64]

K. Boilers B-2, B-3, and B-4 have pre-control emissions of $PM_{10}$ exceeding 100 TPY, therefore they are subject to CAM in this permit, attached and incorporated as Appendix B for Boilers B-3 and B-4, and as Appendix C for Boiler B-2. The boiler CAM plans will become null and void upon the compliance date of the Boiler MACT (DDDDD). The boiler B-2 CAM plan will become null and void when that boiler is permanently taken out of service. By letter dated March 18, 2015, DEQ granted the facility a one-year extension of the compliance date set forth in 40 CFR 63.7495(b). Accordingly, the facility's compliance date for all requirements in but not limited to Condition 1.C.i above and 40 CFR, Subpart DDDDD is January 31, 2017.[40 CFR 64]

L. Paper Machine PM-15 - Winder Section Dust Collection and Control System.
Permittee shall operate and maintain the Winder Section Dust Collection and Control System scrubber in accordance with the manufacturer's specifications and /or scrubber operating parameters recorded during the initial stack test and shall perform inspections, maintenance and repairs as recommended by the manufacturer or according to a mill-specific maintenance program sufficient to ensure proper operation. [Permit No. 99-113-C (M-12)]

4. Hours of Operation. [OAC 252:100-8-6(a)(1)]

i. The facility is authorized to operate 24-hours per day, every day of the year.
ii. Emergency Generator units **DG-1** and **DG-2** are limited to 1,440 hours total combined operating hours, 12-month rolling cumulative, based on the permittee's fiscal month accounting basis.
(1) The generators shall be equipped with meters to measure hours of operation.

(2) An operating log shall be maintained to assure compliance with the limit on operating hours.

5. Emission Controls. [OAC 252:100-8-6(a)(1)], [OAC 252:100-37]

A. Boilers **B-2, B-3, B-4, and B-5.**
The air pollution control devices may be modified or replaced, upon prior approval of the Air Quality Division, provided that it can be demonstrated that the replacement equipment is at least as efficient in controlling emissions as the previous pollution control device.

B. **Boilers B-2**, **B-3**, and **B-4**.
[Permit Nos. 75-053-C&O, 77-076-C&O, 81-066-C&O, & PSD-OK-404]

i. Emissions from Boiler B-2 shall pass through an Electrostatic Precipitator or a control device having equal or lesser emissions prior to discharge to the atmosphere. This requirement shall become null and void once Boiler B-2 is taken out of service.
ii. Emissions from Boiler B-3 shall pass through a baghouse or a control device having equal or lesser emissions prior to discharge to the atmosphere.
iii. BACT for Boiler B-4.
(1) BACT for $NO_X$ emissions shall consist of the use of low $NO_X$ burners to limit emissions to 0.7 lbs/MMBtu.
(2) BACT for PM emissions shall consist of a fabric filter collection system to limit emissions to 0.1 lbs/MMBtu.
(3) BACT for $SO_2$ shall consist of the use of low sulfur content coal when fired by coal to limit emissions to 1.2 lbs/MMBtu.
(4) BACT for CO and VOCs shall consist of boiler design, efficient equipment operation, and the use of combustion controls shall be utilized to ensure minimization of CO and VOCs and to ensure that emissions do not exceed the limits.

C. **Paper Machine PM-14**. [Permit Nos. PSD-OK-404 & 81-066-C&O]
BACT for Paper Machine PM-14 shall consist of the use of low $NO_X$ burners and natural gas for the primary fuel. All other pollutants shall be minimized by proper operation of the unit.

6. A log which lists each emission unit (EU) listed in EUG 4, PP-1 Pulp Processing Units, shall be maintained at the facility. It shall contain adequate information to identify each unit and cross-reference each one to an appropriate identifier such as a serial number or some other identifier. The installation date(s) shall be included for every emissions unit. For EUG 3, Coal Preparation Plant, only a site drawing which identifies all EUs is required to be maintained at the facility.

7. Recordkeeping. The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request.

[OAC 252:100-8-6(a)(3)(B)]

All EUGs

A. Either a safety data sheet (SDS) or a certified product data sheet, that documents the volatile organic solvent content and the HAP content of each raw material for which VOC emissions are regulated by this permit, including printing inks, cleaning solvents, and paper machine additives.

B. Records required by 40 CFR Part 60 Subparts D, Db and Y and 40 CFR Part 63 Subparts KK, JJJJ, ZZZZ, and DDDDD for affected sources.

EUGs 1, 2, and 3

C. Records of fuel analyses, pollution control monitoring/inspection/maintenance, and continuous monitoring, and Method 9 opacity monitoring required by Specific Condition No. 3 (frequencies for fuel sampling and analyses as required by Specific Condition No. 3). For natural gas, compliance can be shown by the following methods: a current gas company bill, lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once annually.

EUGs 1 and 2

D. Information necessary to identify the equipment specified in Specific Condition No. 1.

EUGs 6 and 7

E. Throughput (12-month rolling cumulative, based on the permittee's fiscal month accounting basis):
   i. Combined finished pulp stock, all pulp processing, Systems 1 through 5.
   ii. Combined dry finished paper, all paper machines, PM-11 through PM-15.

EUGs 5 & 6

F. Demonstration of compliance for HAP/VOC limitations by the appropriate method specified.

G. Sufficient records to demonstrate the calculations of VOC emissions from the group of paper printers (currently 3), the group of polyethylene printers (currently 4) and Platemaking combined, and the solvent cleaning of paper machines (currently 5). These records typically include the basis of a mass-balance analysis; gallons and/or pounds of product used, VOC content of each gallon and/or pound, any associated capture or destruction efficiency, and any other appropriate information.

EUG 1 [Permit No. 81-066-C&O]

H. Records required by Specific Conditions 3.E., F., H., I., J., K. and L. including required data recording, supporting information and documentation.

8. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations which qualify as Trivial Activities.
[OAC 252:100-8-6 (a)(3)(B)]

A. For fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day: daily throughput, averaged each time the storage tank is filled.
B. For fluid storage tanks with a capacity of 10,000 gallons or less and a true vapor pressure less than 1.0 psia: Records of capacity of the tanks and contents.
C. For fluid storage tanks with a capacity of less than 39,894 gallons and a true vapor pressure less than 1.5 psia: Records of capacity of the tanks and contents.
D. For non-commercial water washing operations (less than 2,250 barrels/year) and drum crushing operations of empty barrels less than or equal to 55 gallons with less than three percent by volume of residual material: Emissions from products contained in these drums are already accounted for at 100% product usage in other operations, therefore no records will be required.
E. For activities that have the potential to emit less than 5 TPY (actual) of any criteria pollutant: The type of activity and the amount of emissions from that activity (annual).

9. The Permit Shield (Standard Conditions, Section VI) is extended to the following requirements that have been determined to be inapplicable to this facility.
[OAC 252:100-8-6(d)(2)]

| | | |
|---|---|---|
| A. | OAC 252:100-7 | Permits for Minor Facilities |
| B. | OAC 252:100-11 | Alternative Emissions Reduction |
| C. | OAC 252:100-15 | Mobile Sources |
| D. | OAC 252:100-17 | Incinerators |
| E. | OAC 252:100-23 | Cotton Gins |
| F. | OAC 252:100-24 | Particulate Emissions From Grain, Feed, or Seed Operations |
| G. | OAC 252:100-35 | Carbon Monoxide |
| H. | OAC 252:100-39 | Nonattainment Areas |
| I. | 40 CFR Part 72 | Acid Rain |

10. Permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, an Annual Compliance Certification for each twelve (12) month period, no later than 30 days after February 28, 2010 and each 12 month anniversary date thereafter for the duration of this permit. The certification shall include a monthly summary of any noncompliance with the permit or applicable regulations for the past year. Permittee shall also submit to Air Quality Division of DEQ, a Semi-Annual Monitoring and Deviation Report for each six (6) month period, no later than 30 days after August 31, 2009 and February 28, 2010 and each six

(6) month anniversary date thereafter for the duration of this permit. The report shall include the results of any required monitoring for each six (6) month monitoring period.
[OAC 252:100-8-6(c)(5)(A), (C) & (D)], [OAC 252:100-43]

11. AQD reserves the right to require stack testing for any emission unit.

## Appendix A

## CAM MONITORING APPROACH – Regenerative Thermal Oxidizer

| | Indicator No. 1 |
|---|---|
| I. Indicator | Temperature of Regenerative Thermal Oxidizer (RTO) burner chamber. |
| A. Measurement Approach | Maintain and operate a continuous monitoring system that measures burner chamber temperature using thermocouples located in the burner chamber. |
| II. Indicator Range | An excursion is defined as below the minimum burner chamber temperature of 1,363 °F established in the permit when the printing operations fail to cease. The RTO is equipped with a low-temperature interlock system that is configured to cease printing operations should the temperature fall below the minimum burner chamber temperature.<br><br>An excursion will trigger an investigation of the occurrence, corrective actions, and a potential reporting requirement, if necessary. |
| III. Performance Criteria<br><br>A. Data Representativeness | The operating range was developed by an initial performance stack test which verified a destruction efficiency of >95%. |
| B. QA/QC Practices and Criteria | 1. Periodic report review.<br>2. Inspect the thermocouples annually.<br>3. Maintenance schedule per Inspection and Preventative Maintenance (IPM) Plan. |
| C. i. Monitoring Frequency | Temperature measured by a continuous monitoring system while the RTO is operating. |
| ii. Data Collection Procedures | The RTO temperature is monitored by a chart recorder and the Mill's backup computer database. |
| iii. Averaging period | Instantaneous, not to exceed the minimum. |

## Appendix B

## CAM MONITORING APPROACH – Boilers B-3 and B-4

| | **Indicator No. 1** | **Indicator No. 2** |
|---|---|---|
| I. Indicator | Opacity | Pressure Drop |
| Measurement Approach | 3-hour opacity is measured continuously using a certified continuous opacity monitor system (COMS) and compared with the PM compliance threshold. | Pressure drop through the baghouse is measured continuously using a differential pressure gauge. |
| II. Indicator Range | Opacity below 20%, 3-hour rolling average. | Pressure drop not less than 1 inch of water, 3-hour rolling average after cleaning. |
| III. Performance Criteria<br>A. Data Representativeness | Opacity is measured at the stack by a continuous opacity monitor. The minimum accuracy is $\pm$ 2%. | Pressure drop across the baghouse is measured at the baghouse inlet and exhaust. The minimum accuracy of the device is $\pm$ 0.5 inches $H_2O$. |
| B. Verification of Operational Status | Shows positive non-zero opacity. | Shows positive non-zero pressure drop. |
| C. QA/QC Practices and Criteria | Opacity monitor zeroed when unit not operating along with normal calibration and maintenance procedures. Windows are periodically inspected and cleaned as per manufacturer's recommendations. | Electronic pressure transducers specified to $\pm$ 5% accuracy. Continuous data collection and recording to historian, including trending capability. Indications of baghouse filter media leakage investigated as soon as practicable, including inspection of pressure taps for potential plugging. |
| D. i. Monitoring Frequency | Opacity is monitored continuously. | Pressure drop is measured and recorded at least every 15 minutes. |
| ii. Data Collection Procedures | A data acquisition system records data electronically, 6-minute averages totalized into 3-hour rolling averages for PM compliance correlation. | A data acquisition system records data electronically, can be retrieved in 3-hour rolling averages. |
| iii. Averaging Period | 3-hour rolling average (consistent with the PM averaging time of 40 CFR §60.8 and Appendix A, Method 5) | 3-hour rolling average. |

## Appendix C

## CAM MONITORING APPROACH – Boiler B-2

| | **Indicator No. 1** | **Indicator No. 2** |
|---|---|---|
| I. Indicator | Opacity | Total Secondary Kilovolts |
| Measurement Approach | 3-hour opacity is measured continuously using a certified continuous opacity monitoring system (COMS) and compared with the PM compliance threshold. | Operational status is monitored per OEM's recommended electrical performance monitors for each ESP field. Regardless of operational status indicators, the opacity to PM correlation threshold will be used as the primary indicator of PM limitation compliance. |
| II. Indicator Range | Opacity below 20%, 3-hour rolling average (combined stack) | Operational status will be determined by monitoring Total Secondary Kilovolts (TSKV). Compliance with allowable PM emission limits is indicated by monitoring 3-hour rolling average opacity. When the COMS is unavailable or out of service, the ESP TSKV operating parameter must be maintained above 150 KV on a 3-hour rolling average. . If TSKV indications are unavailable from the field, manual hourly readings will be logged. |
| III. Performance Criteria<br>A. Data Representativeness | Opacity is measured at the stack by a continuous opacity monitor. The minimum accuracy is $\pm$ 2%. | NA |
| B. Verification of Operational Status | Shows positive non-zero opacity. | NA |
| C. QA/QC Practices and Criteria | Opacity monitor zeroed when unit not operating and periodically calibrated and maintained as presently required via Title V Operating Permit. | Status indicators and rapper operation checked quarterly to ensure proper operation. |
| D. i. Monitoring Frequency | Opacity is monitored continuously. | TSKV status is recorded and measured continuously. |
| ii. Data Collection Procedures | A data acquisition system records data electronically, 6- | A data acquisition system records data electronically; TSKV is |

| | **Indicator No. 1** | **Indicator No. 2** |
|---|---|---|
| | minute averages totalized into 3-hour rolling averages for PM compliance correlation. | totalized into 3-hour rolling averages. |
| iii. Averaging Period | 3-hour rolling average (consistent with the PM averaging time of 40 CFR §60.8 and Appendix A, Method 5) | 3-hour rolling average. |

**MAJOR SOURCE AIR QUALITY PERMIT**
**STANDARD CONDITIONS**
**(June 21, 2016)**

## SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.
[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

## SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements.
[OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

## SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:
(1) the date, place and time of sampling or measurement;
(2) the date or dates analyses were performed;
(3) the company or entity which performed the analyses;
(4) the analytical techniques or methods used;
(5) the results of such analyses; and
(6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report. [OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions. [OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act. [OAC 252:100-43]

F. Any Annual Certification of Compliance, Semi Annual Monitoring and Deviation Report, Excess Emission Report, and Annual Emission Inventory submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1), OAC 252:100-9-7(e), and OAC 252:100-5-2.1(f)]

G. Any owner or operator subject to the provisions of New Source Performance Standards ("NSPS") under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants ("NESHAPs") under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality.

[OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

J. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter ($PM_{10}$). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

K. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

## SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit.

[OAC 252:100-8-6(c)(5)(A), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

[OAC 252:100-8-6(c)(5)(C)(i)-(v)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." [OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

## SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6(c)(6)]

## SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6(d)(2)]

## SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.
[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

## SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

## SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
[OAC 252:100-8-6 (a)(6)]

## SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.
[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

## SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking,

reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.
[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.
[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.
[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

## SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.
[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances: [OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

(1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
(2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
(3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
(4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d). [OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a "grandfathered source," as defined under AQD rules. Such changes may require a permit modification.
[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6(c)(6)]

## SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(17) for confidential information submitted to or obtained by the DEQ under this section):

(1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
(3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
(4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

## SECTION XIV. EMERGENCIES

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance. [OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that: [OAC 252:100-8-6 (e)(2)]

(1) an emergency occurred and the permittee can identify the cause or causes of the emergency;
(2) the permitted facility was at the time being properly operated;
(3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit.

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

## SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6(a)(4)]

## SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

(1) 5 tons per year of any one criteria pollutant.
(2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.
[OAC 252:100-8-2 and OAC 252:100, Appendix I]

## SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.
[OAC 252:100-8-2 and OAC 252:100, Appendix J]

## SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the

permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

(1) result in no net emissions increases,
(2) are not modifications under any provision of Title I of the federal Clean Air Act, and
(3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph. [OAC 252:100-8-6(f)(2)]

## SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

(1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]

(2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]

(3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for: [OAC 252:100-25]

(a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
(b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
(c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
(d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.

(4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

(5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]

(6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]

(7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

## SECTION XX. STRATOSPHERIC OZONE PROTECTION

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances: [40 CFR 82, Subpart A]

(1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4;
(2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13; and
(3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B: [40 CFR 82, Subpart F]

(1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156;
(2) Equipment used during the maintenance, service, repair, or disposal of appliances must

comply with the standards for recycling and recovery equipment pursuant to § 82.158;
(3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161;
(4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166;
(5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and
(6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

## SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source's Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

(1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.
(2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
(3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
(4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R.§ 70.8(a) and (c).
(5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
(6) The DEQ complies with 40 C.F.R. § 70.8(d).
(7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
(8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
(9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by

DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).

(10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

## SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[OAC 252:100-43-6]

Rodney Bond, Operating Vice-President
Georgia-Pacific Consumer Products LP, Muskogee
4901 Chandler Road
Muskogee, OK 74403-4909

RE: Construction Permit No. **2010-278-C (M-3)**
Georgia-Pacific Consumer Products LP – Muskogee Mill
Facility ID No.: 643
4901 Chandler Road, Muskogee
Section 33 & W1/2 Section 34, T15N, R19EIM
Muskogee County, OK (Lat. 35.741; Long. -95.305)
Directions: Muskogee Turnpike to Chandler Exit, East to 45th Street, South to Harold Abitz Drive, East into facility.

Dear Mr. Bond:

Enclosed is the permit authorizing construction of the Boiler B-5 and the Dry Sorbent Injection System on boilers B-3 and B-4. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emission inventory for this facility. An emission inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) every year by April 1st. Any questions concerning the form or submittal process should be referred to the Emission Inventory Staff at 405-702-4100.

Thank you for your cooperation in this matter. If we may be of further service, please contact me at (918) 293-1617 or by mail at DEQ Regional Office at Tulsa, 3105 East Skelly Drive, Suite 200, Tulsa, Oklahoma, 74105.

Sincerely,

Phillip Fielder, P.E.
Permits and Engineering Group Manager
**AIR QUALITY DIVISION**

Rodney Bond, Operating Vice-President
Georgia-Pacific Consumer Products LP, Muskogee
4901 Chandler Road
Muskogee, OK 74403-4909

Re: Construction Permit No. 2010-278-**C (M-3)**
Georgia-Pacific Consumer Products LP – Muskogee Mill
4901 Chandler Road, Muskogee

Dear Mr. Bond:

Air Quality has received the permit application for the referenced facility and completed initial review. This application has been determined to be a Tier II. In accordance with 27A O.S. 2-14-301 and 302 and OAC 252:4-7-13(c), the enclosed draft permit is now ready for public review. The requirements for public review of the draft permit include the following steps, which you must accomplish.

1. Publish at least one legal notice (one day) in at least one newspaper of general circulation within the county where the facility is located. (Instructions enclosed)
2. Provide for public review, for a period of 30 days following the date of the newspaper announcement, a copy of the application and draft permit at a convenient location (preferentially at a public location) within the county of the facility.
3. Send AQD a signed affidavit of publication for the notice(s) from Item #1 above within 20 days of publication of the draft permit. Any additional comments or requested changes you have for the draft permit or the application should be submitted within 30 days of publication.

Thank you for your cooperation in this matter. If we may be of further service, please contact David Pollard at (918) 293-1617 or by mail at 3105 E. Skelly Drive, Suite 200, Tulsa, OK 74105.

Sincerely,

Phillip Fielder, P.E.
Permits and Engineering Group Manager
**AIR QUALITY DIVISION**

Enclosures

# PART 70 PERMIT

**AIR QUALITY DIVISION**
**STATE OF OKLAHOMA**
**DEPARTMENT OF ENVIRONMENTAL QUALITY**
**707 N. ROBINSON, SUITE 4100**
**P.O. BOX 1677**
**OKLAHOMA CITY, OKLAHOMA 73101-1677**

## Permit No. 2010-278-C (M-3)

**GEORGIA-PACIFIC CONSUMER PRODUCTS LP,**

**having complied with the requirements of the law, is hereby granted permission to construct Boiler 5 (B-5) and the DSI System on Boilers B-3 and B-4 at the Muskogee Paper Mill located at 4901 Chandler Road, Muskogee, Oklahoma, Muskogee County, having the legal description of Section 33 & W/2 Section 34, T15N, R19 EIM,**

**subject to standard conditions dated June 21, 2016 and specific conditions, both attached.**

**This permit shall expire upon becoming incorporated into the Title V permit or as authorized under Section VIII of the Standard Conditions, whichever occurs first.**

**Eddie Terrill** **Date**

**Division Director**

**Air Quality Division**