TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Georgia-Pacific Consumer Operations, LLC
Post Office Box 919
Palatka, Florida 32178

Palatka Mill
Facility ID No. 1070005

PROJECT

Project No. 1070005-081-AC
Application for Minor Source Air Construction Permit
Replacement of Converting Department Baghouse with Drum Filtering System

COUNTY

Putnam County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

June 20, 2013

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Chapters 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

Facility Description and Location

Georgia-Pacific Consumer Operations, LLC (Georgia-Pacific) operates the existing Palatka Mill, which is a Kraft pulp and paper mill that consists of major activities areas such as: chip handling, pulping, bleaching, chemical recovery, utilities, paper machines, converting, and turpentine and tall oil production. Refer to Figure 1and Figure 2 below. The existing Palatka Mill is located in Putnam County at 215 County Road 216 in Palatka, Florida.

The pulp and paper mill is categorized under Standard Industrial Classification (SIC) Code Nos. 2611 and 2621. The UTM coordinates of the existing facility are Zone 17, 434.0 kilometers (km) East, and 3283.4 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to Ambient Air Quality Standards (AAQS).

Figure 1 – Location of Putnam County, Florida

Figure 2 – Location of Palatka Mill

Facility Regulatory Categories

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.
- The facility does operate units subject to the Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 Code of Federal Regulations (CFR) 63.
- The Converting Department operations are subject to the applicable federal NESHAP provisions in Subparts A (General Provisions) and JJJJ (Paper and other Web Coating) of 40 CFR 63. The existing facility has met the applicable requirements of these subparts.

Project Description

The applicant, Georgia-Pacific, requests authorization to replace the existing baghouse that controls emissions of particulate matter (PM) from 12 tissue converting lines in the Converting Department (EU 050) with a new drum filtering system. The new drum filtering system is designed with a higher air flow capacity than the existing baghouse; 225,000 actual cubic feet per minute (acfm) versus 207,000 acfm. The new control equipment will not affect production of the 12 converting lines. The proposed project is scheduled to begin in August 2013 and initial startup in September 2013.

Processing Schedule

05/17/2013 Received the application for a minor source air pollution construction permit, application complete.

2. PSD APPLICABILITY

General PSD Applicability

The Department regulates major stationary sources in accordance with Florida's PSD program pursuant to Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal ambient air quality standards (AAQS) or areas designated as "unclassifiable" for these regulated pollutants. Commonly addressed PSD pollutants for Kraft pulp mills such as the Palatka Mill include: carbon monoxide (CO), nitrogen oxide (NO_X), PM, PM with a mean diameter of 10 microns or less (PM_{10}), PM with a mean diameter of 2.5 microns or less ($PM_{2.5}$), sulfur dioxide (SO_2), volatile organic compounds (VOC) and sulfuric acid mist (SAM).

Additional PSD pollutants that are more common to certain other industries include: lead (Pb), mercury (Hg), hydrogen sulfide (H_2S), TRS including H_2S, reduced sulfur compounds (RSC) including H_2S, municipal waste combustor (MWC) organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (dioxin/furan), MWC metals measured as PM; MWC acid gases measured as SO_2 and HCl, and municipal solid waste (MSW) landfill emissions as non-methane organic compounds (NMOC).

As defined in Rule 62-210.200(Definitions), F.A.C., a stationary source is a "major stationary source" (major PSD source) if it emits or has the potential to emit (PTE):

- 250 tons per year (tons/year) or more of any PSD pollutant; <u>or</u>
- 100 tons/year or more of any PSD pollutant <u>and</u> the facility belongs to one of the 28 listed PSD major facility categories.

The list given in the citation includes the category of "Kraft pulp mills". The given category applies to the facility before and after the proposed project. The Palatka Mill is a major stationary source based on actual emissions of

and potential to emit 100 tons/year or more of several individual PSD pollutants.

For major stationary sources such as the Palatka Mill, PSD applicability for modification projects is based on thresholds known as the significant emission rates (SER) as defined in Rule 62-210.200(Definitions), F.A.C. Any "net emissions increase" as defined in Rule 62-210.200(Definitions), F.A.C. of a PSD pollutant from the project that equals or exceeds the respective SER is considered "significant". SER also means any emissions rate or any net emissions increase of a PSD pollutant associated with a major stationary source or major modification which would construct within 10 km of a Class I area and have an impact on such area equal to or greater than 1 gram per cubic meter, 24-hour average.

Although a facility may be "major" (i.e. emits or has the potential to emit 100 or 250 tons/year (TPY) as applicable) for only one PSD pollutant, a project must include Best Available Control Technology (BACT) controls for any PSD pollutant that exceeds the corresponding significant emission rates given in TABLE 1 below.

Table 1 - List of SER by PSD-Pollutants. [1, 3]

Pollutant	SER (TPY)	Pollutant	SER (TPY)
CO	100	NO_X	40
$PM/PM_{10}/PM_{2.5}$	25/15/10	Ozone (VOC) [2]	40
$PM_{2.5}$ (NO_X)	40	$PM_{2.5}$ (SO_2)	40
Ozone (NO_X) [2]	40	SAM	7
SO_2	40	Pb	0.6
Hg	0.1	GHG (CO_2e)	75,000 [3]

1. Excluding fluoride and those pollutants defined for Pulp and Paper, MWC, MSW landfills.
2. Ozone (O_3) is regulated by its precursors (VOC and NO_X). PSD for $PM_{2.5}$ can be triggered by its precursors (NO_X and SO_2).
3. Federal SER of 75,000 TPY for GHG (as CO_2e) for PSD sources and has not been incorporated into Department rules.

According to 40 CFR 52.21, six greenhouse gases (GHG), are also be subject to regulation at new stationary sources that will emit or have the potential to emit 100,000 tons/year (SER equal to 75,000 tons/year) expressed as the carbon dioxide equivalent emissions (CO_2e). This requirement has not been incorporated into Department rules but is a separate requirement of the EPA.

PSD Applicability for Project

The project is located in Putnam County which is in an area that is currently in attainment with the AAQS or is otherwise designated as unclassifiable. The proposed project will not increase emissions for any PSD pollutant; therefore, the project is not subject to a PSD preconstruction review.

3. DEPARTMENT REVIEW

Converting Department

The Converting Department consists of paper core manufacturing activities and laminating/ply-bonding of embossed, multi-layered paper/tissue products. Paper core manufacturing activities take place within a web coating line where paper core stock is drawn from one or more rolls and glue is continuously applied along its length and overlapped to form the round paper cores. The embossing operation imposes a raised or depressed impression on a paper web by passing the web between two steel rolls or plates, one of which is engraved. Laminating/ply-bonding of embossed, multi-layered paper follows the embossing operation for the creation of multi-ply products, which adhesive is applied by a roller to bind multiple layers of substrate together.

The facility operates the following 12 converting lines at the mill that consist of slitting and rewinding operations:

- Bath tissue: Line 1,2,3,4,5,6,7,8,10
- Paper towel: Line 2,3,4

Dust generated from the 12 converting lines is directed to a baghouse rated for 207,000 acfm. The existing baghouse was installed in 1979. The baghouse consists of three distinct sections, with each section rated at

69,000 acfm of air flow from the converting lines. The clean exhaust air from the baghouse is returned to the Converting Building approximately 50% of the time during the year (mainly winter months) while the exhaust air from the baghouse is directed to the atmosphere during the summer months. Small quantities of fugitive VOC emissions are generated from the converting lines with the application of core glue and adhesives. The applicant is proposing to replace the existing baghouse with a new drum filtering system.

In 2003, the Mill installed two new converting lines, referred to as the K-5 and K-6 Lines that process paper towels. Dusts generated from these two operations are directed to a baghouse rated for 67,000 acfm. Clean air exhausted from this baghouse is recycled to the Converting Building all year long. Small quantities of fugitive VOC emissions are generated from this converting line with the application of core glue and adhesives. This baghouse is not affected by this project.

New Drum Filtering System

The project replaces the existing baghouse system with a new drum filtering system, Osprey's New BLUE-SKY Filter System (or equivalent to), to control PM emissions from the 12 tissue converting lines in the Converting Department (see Figure 3 below). The new drum filtering system air flow capacity is 207,000 dry standard cubic feet per minute (dscfm), equivalent to 225,000 acfm, i.e., the flow capacity of the new drum filtering system is approximately 9% higher than the existing baghouse collection system. The drum filtering system will consist of three drum filters; each operating with a flow rate of 69,000 dscfm (75,000 acfm).

Figure 3. Osprey's New BLUE-SKY Filter System. HEPA (Stage 4) is not part of this project.

Each drum filter will consist of three stages of filtration:

1. *Stage 1* features an upgraded Osprey rotary drum filter that keeps any dust from accumulating below the lower explosive limit, at all times. The upgrades include: trapeze nozzle mounting; drive outside the filter; special lights and doors that will not trap dust; special inlet and floor assembly to maintain air and material velocity; wider media holding bands to limit the amount surface dust outside the nozzle paths; and new high performance filter media and seals.
2. *Stage 2* is a high efficiency, high capacity pleated pocket filter tank rated Minimum Efficiency Reporting Value (MERV) 10. All filters are mounted in a custom manufactured steel frame assembly.
3. *Stage 3* is a high efficiency, high capacity pleated pocket filter tank rated MERV 14. All filters are mounted in a custom manufactured steel frame assembly.

An air filter's performance is determined by measuring the particle counts upstream and downstream of the filter being tested. The MERV is a rating that is used to determine the percentage of particles captured by the filter,

particle size removal efficiency. The test method/guidelines used to provide the particle size efficiency is the ASHRAE 52.2. [1]

[1] *Understanding MERV or the Minimum Efficiency Reporting Value © 1998-2013 Allergy Clean Environments.*

Table 2 - MERV Rating

MERV Parameters (% Efficiency)			
MERV	**0.30 – 1 microns**	**1 – 3 microns**	**3 – 10 microns**
10	---	50 < 65	85
14	75 < 85	90	90

As shown in the Table 2, Stage 2 (MERV 10) of the filtration process has a PM with a mean diameter of 10 microns or less (PM_{10}) removal efficiency of 85% and $PM_{2.5}$ removal efficiency is between 50% and 65%. Stage 3 (MERV 14) of the filtration process has a PM_{10} and $PM_{2.5}$ removal efficiency of 90%.

Emissions

The applicant provided an estimated maximum PM-filterable (PM_{10} and $PM_{2.5}$ equivalent) emission rate for the existing baghouse of 0.005 grains per dry standard cubic feet (gr/dscf), which is equivalent to 8.9 pounds per hour (lbs/hour) and 38.9 tons/year. No chemicals are added to the converting process and the low moisture content of the exhaust gases from the converting lines would not lead to the formation of condensable PM; therefore, the applicant states that no condensable PM is present in the exhaust gases leaving the baghouse.

The applicant provided PM test results from another Georgia Pacific mill of less than 0.001 gr/dscf for an equivalent Osprey drum filtration system used on their tissue converting lines. Based on test data provided, the applicant estimated the that the new drum filtering system can achieve the following: a conservative outlet grain loading of 0.003 gr/dscf or less for filterable PM emissions; filterable PM_{10} emissions to be 50% less that filterable PM; and $PM_{2.5}$ emissions to be 40% less than the filterable PM. As provided in the application, Table 3 below summarizes potential emissions for the project.

Table 3 - Summary of the Applicant's Potential Emissions Analysis

Pollutant	Potential Particulate Matter Emissions, Tons/Year		Increase/Decrease
	Potential Emissions	**Existing Baghouse Emissions**	
PM	23.2	38.9	-15.7
PM_{10}	11.6	38.9	-27.3
$PM_{2.5}$	9.2	38.9	-29.7

As shown in the table above, the proposed project will result in both an actual and potential decrease in $PM/PM_{10}/PM_{2.5}$ emissions from the 12 converting lines. The applicant contends that a stack test to determine PM emissions would be a burden due to the expense, complexity of conducting such a test given the configuration and very low levels of emissions expected.

The Department recognizes that the applicant is replacing an existing baghouse that was installed in 1979 with a new upgraded drum filtering system. The existing baghouse and proposed drum filtering system will be controlling the dust generated from 12 converting lines in the Converting Department. The Department believes the applicant has provided reasonable assurance that the additional particulate matter emissions will not trigger a PSD review.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Tammy McWade is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at 850/717-9086 or by email tammy.mcwade@dep.state.fl.us at the Department's Office of Permitting and

Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.