PSD PERMIT APPLICATION
600 MMSF CAPACITY

GEORGIA-PACIFIC CORPORATION

Proposed Oriented Strandboard Facility
HOSFORD, FLORIDA

JULY 2004

Georgia-Pacific Corporation
133 Peachtree Street NE (30303)
P.O. Box 105605
Atlanta, Georgia 30348-5605
Telephone (404) 652-4000

John Reynolds, P.E.
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

July 8, 2004

Re: Georgia-Pacific Corporation Proposed Oriented Strandboard Plant, DEP File No. 0770010-001-AC

Mr. Reynolds:

Georgia-Pacific Corporation (GP) is pleased to submit 4 copies of an application to amend our air construction permit for our proposed oriented strandboard (OSB) plant near Hosford, Florida. Each copy includes a compact disc with air dispersion modeling files. We look forward to your assistance in amending our current air permit to allow a production capacity of 600 million square feet of OSB per year. The current construction permit allows up to 475 million square feet of OSB per year. Please contact me at (404) 652-4293 or Paul Vasquez (404) 654-7327 with questions on this application.

Sincerely,

Mark J. Aguilar

Mark J. Aguilar
Senior Environmental Engineer
Georgia-Pacific Corporation
P.E. 52248

Cc: Paul Vasquez, G-P
Cc: Kevin M. White P.E., FDEP

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 28, 2004

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
12795 W. Alameda Parkway
Lakewood, Colorado 80228

RE: Georgia-Pacific Corporation
Oriented Strandboard Facility
0770010-002-AC, PSD-FL-282A

Dear Mr. Bunyak:

Enclosed for your review and comment is a PSD application submitted by Georgia-Pacific Corporation to modify their facility in Hosford, Liberty County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact John Reynolds, review engineer, at 850/921-9530.

Sincerely,

Patty Adams

for James K. Pennington, P.E.
Administrator
North Permitting Section

AAL/pa

Enclosure

cc: J. Reynolds

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 2, 2004

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: Georgia-Pacific Corporation
Oriented Strandboard Facility
0770010-002-AC, PSD-FL-282A

Dear Mr. Worley:

Enclosed for your review and comment is a PSD application submitted by Georgia-Pacific Corporation to modify their facility in Hosford, Liberty County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact John Reynolds, review engineer, at 850/921-9530.

Sincerely,

Patty Adams

for James K. Pennington, P.E.
Administrator
North Permitting Section

JKP/pa

Enclosure

cc: J. Reynolds

TABLE OF CONTENTS

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BUREAU OF AIR REGULATION

1. EXECUTIVE SUMMARY

Georgia-Pacific Corporation (G-P) has commenced construction on a new oriented strandboard (OSB) facility near Hosford, Florida in northeastern Liberty County. The facility location is approximately 7 kilometers (km) northeast of Hosford and 2 km north of Lowry. The plant is bordered by State Route 65 on the east. The Apalachicola & Northern Railway defines the western boundary of the plant site. The plant entrance will be located along State Route 65. G-P anticipates that startup of the plant will occur in the first quarter of 2005. The original construction permit, 0770010-001-AC, PSD-FL-282, is set to expire in October 2004. This application is to amend the construction permit to accommodate minor design changes, a higher maximum level of production, and associated emissions changes.

Liberty County has been designated by the U.S. Environmental Protection Agency (US EPA) as in attainment or unclassified for all criteria pollutants. Under Prevention of Significant Deterioration (PSD) definitions, the Hosford OSB facility will be constructed as a major stationary source since it will have the potential-to-emit more than 250 tons per year (tpy) of at least one regulated air pollutant. As a new major source in an attainment region, the facility will be subject to PSD permitting requirements as described in 40 CFR 52.21.

The proposed OSB plant will have the capacity to produce 600 million square feet per year (MMsf/yr), on a 3/8-inch basis. The original construction permit specified a capacity of 475 MMsf/yr. Major pieces of equipment will include five dryers, a press, a thermal oil heating system, and associated materials handling equipment. Logs will be unloaded and stored in the log yard. The logs will then be cut to size, debarked, and processed into flakes. The flakes will be dried in the five rotary dryers and then mixed with resin and wax and formed into a mat. The mats will then move into the thermal oil-heated press, where they will be compressed and heated to bond the resin to the flakes. The OSB will be cut to size, cooled, and the edges will be sprayed with sealant to prevent swelling. The finished OSB will then be packed and shipped off-site. Bark from the debarkers and other green end material from the log yard will be shipped off-site for use as wood fuel or for use in horticultural applications. Dry end material will either be burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations. The press will be heated with thermal oil, using wood suspension burners, and will utilize natural gas as a back-up fuel.

The dryers and press will be controlled by three oxidizers. Two of the oxidizers (RTO/TCOs) will be dedicated to the dryers and the third will control emissions from the press(RTO/TCO/RCO). The dryer RTOs will be preceded by multiclones. When the thermal oil system uses sanderdust as a fuel, emissions will be controlled by an electrostatic precipitator (ESP). During normal operations, the exhaust gases from the thermal oil system burners will be routed through the dryer system where they, along with the exhaust gases from the dryers, will pass through the multiclones and RTOs prior to exiting to the atmosphere. Particulate matter emissions resulting from material handling will be controlled by a series of bag filters.

The proposed plant is subject to PSD review for particulate matter (PM) (both total suspended particulate matter (TSP) and particulate matter less than 10 microns in diameter (PM_{10})), ozone (based on a significant increase in volatile organic compound (VOC) emissions), carbon monoxide (CO), and nitrogen oxides (NO_x).

This completed PSD permit application contains an air quality modeling analysis, Best Available Control Technology (BACT) review, Class I areas analysis, additional impacts analysis, and completed permit application forms.

2. PERMIT APPLICATION FORMS

The completed permit application forms are included in Attachment A.

3. INTRODUCTION

Georgia-Pacific Corporation (G-P) proposes to construct and operate an oriented strandboard (OSB) facility near Hosford, Florida in northeastern Liberty County. The facility will have the capacity to produce 600 million square feet (MMSF) (3/8-inch basis) of OSB annually.

Liberty County has been designated by the U.S. Environmental Protection Agency (US EPA) as in attainment or unclassified for all criteria pollutants. Under Prevention of Significant Deterioration (PSD) definitions, the Hosford OSB facility will be constructed as a major stationary source since it will have the potential-to-emit more than 250 tons per year (tpy) of at least one regulated air pollutant. As a new major source in an attainment region, the facility will be subject to PSD permitting requirements as described in 40 CFR 52.21.

3.1 Facility Location

The facility location is approximately 7 kilometers (km) northeast of Hosford and 2 km north of Lowry. The plant is bordered by State Route 65 on the east. The Apalachicola & Northern Railway will define the western boundary of the plant site. The plant entrance will be located along State Route 65. The proposed location for the facility is shown on a United States Geological Survey (USGS) map in Figure 3-1.

3.2 Process Description

A drawing of the plant layout, showing the property boundary, is included as Figure 3-2. A more detailed plot plan, showing the equipment layout, is included as Figure 3-3. Two process flow diagrams are included as Figures 3-4a and 3-4b.

Logs, resin (liquid or powdered), and wax are the primary raw materials used in OSB panel production. The production process will be comprised of four principal manufacturing processes: (1) furnish production, which includes debarking, slashing, and flaking; (2) flake drying; (3) forming and pressing; and (4) finishing, which consists of sawing and sanding.

Logs will be unloaded and temporarily stored in the log yard. The logs will then be cut to size, debarked, and processed into flakes.

The drying process will consist of five (5) flake dryers (horizontal, cylindrical rotary drum-type) heated by suspension-type burners, and a pneumatic system that conveys the flakes through the dryers. The suspension burners will be designed to burn ground wood fuel. Raw wood fuel will first be ground in the hammermill and then stored in a metering bin. From the metering bin, the ground wood fuel will be pneumatically transferred and blown into the burner. Maximum heat input to each dryer will be 40 million British thermal units per hour (MMBtu/hr). The wood fuel will be introduced tangentially to the burners, creating a cyclonic flow pattern, thereby promoting combustion efficiency. The flue gases leaving the combustion zone will be at approximately 1600 degrees Fahrenheit (°F), but will be immediately cooled down by the addition of dilution air between the burner and the dryer.

Title

Figure 3-1.
Georgia-Pacific Proposed
Hosford OSB Plant

Legend

Y Location of Proposed Hosford OSB Plant

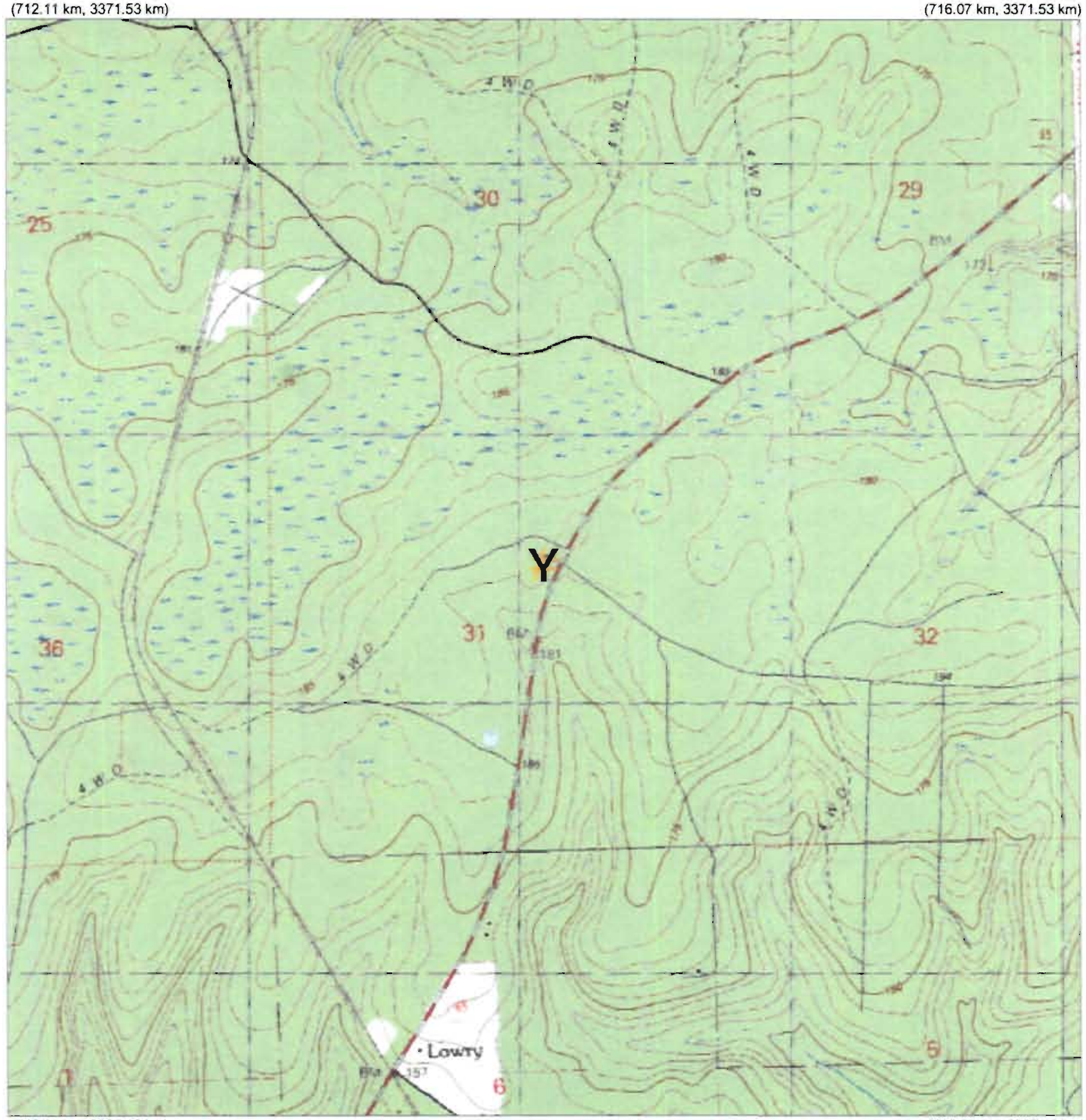
Scale

500 0 500 Meters

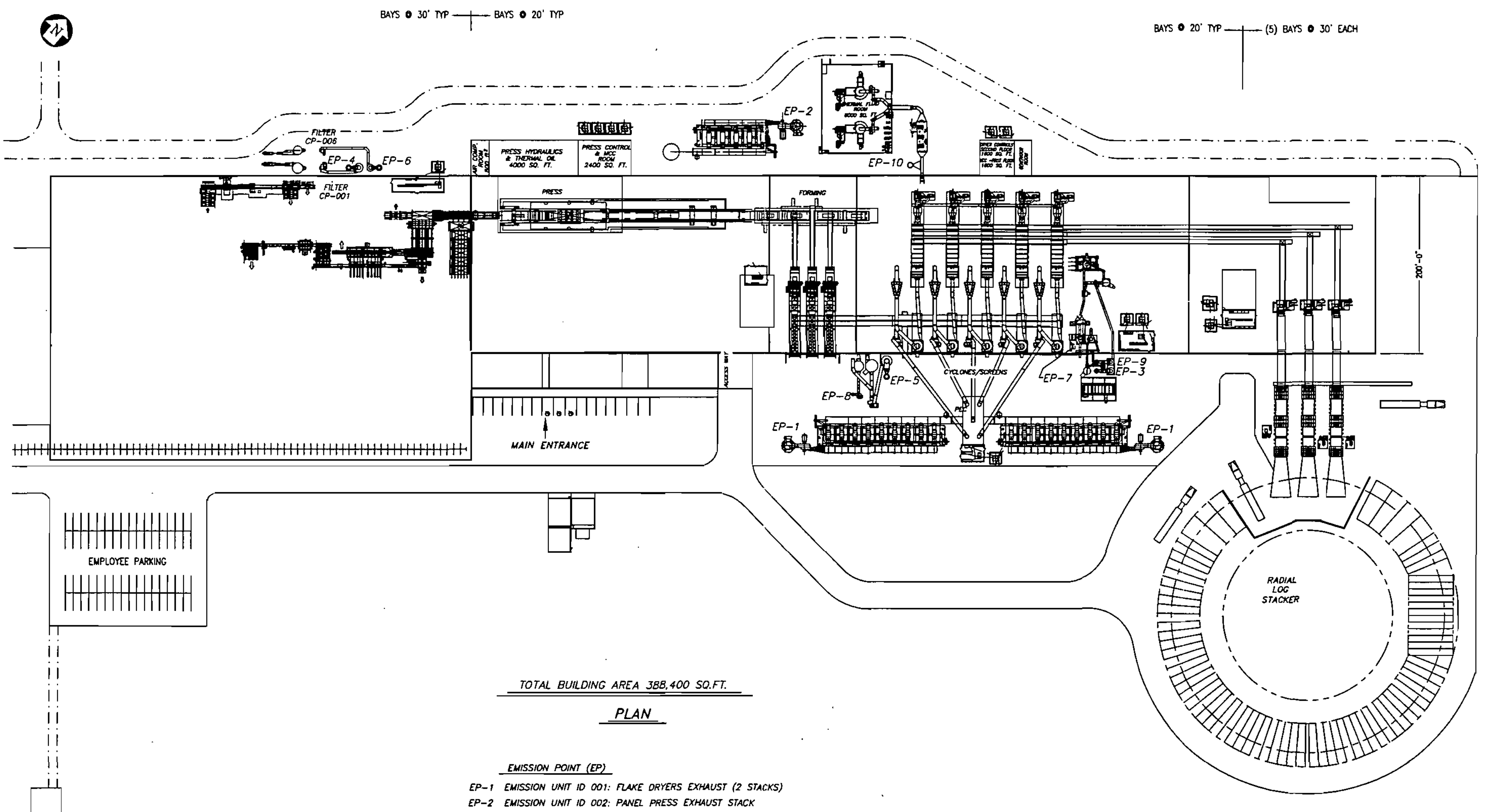
North Arrow

N
W E
S

(712.11 km, 3371.53 km) (716.07 km, 3371.53 km)



(712.11 km, 3367.48 km) (716.07 km, 3367.48 km)



TOTAL BUILDING AREA 388,400 SQ.FT.

PLAN

EMISSION POINT (EP)

EP-1 EMISSION UNIT ID 001: FLAKE DRYERS EXHAUST (2 STACKS)
EP-2 EMISSION UNIT ID 002: PANEL PRESS EXHAUST STACK
EP-3 EMISSION UNIT ID 003: SCREEN FINES W/SAW TRIM TRANSFER BAG FILTER EXHAUST
EP-4 EMISSION UNIT ID 004: SAW TRIM/FINISHING LINE BAG FILTER EXHAUST
EP-5 EMISSION UNIT ID 005: MAT REJECT/FLYING SAW BAG FILTER EXHAUST
EP-6 EMISSION UNIT ID 006: SPECIALTY SAW/SANDER BAG FILTER EXHAUST
EP-7 EMISSION UNIT ID 007: FUEL SYSTEM PNEUMATICS BAG FILTER EXHAUST
EP-8 EMISSION UNIT ID 008: FORMING BINS BAG FILTER EXHAUST
EP-9 EMISSION UNIT ID 009: HAMMER MILL SYSTEM BAG FILTER EXHAUST
EP-10 EMISSION UNIT ID 010: HOT OIL HEATER ESP EXHAUST STACK

NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	12/14/99	
B	REVISED BUILDING AREA WAS 359,200	RPS	1/4/00	
C	GENERAL REVISIONS	JAD	5/5/0?	

GEORGIA-PACIFIC CORPORATION
BUILDING PRODUCTS ENGINEERING DIVISION
133 Peachtree St. 18th Floor
ATLANTA, GEORGIA 30303
"Safety in Engineering, We Take It Seriously"

PLANT LOCATION: Hosford, Fl — OSB

SITE PLAN LAYOUT
AIR EMISSION POINTS

SCALE: GRAPHIC — DRAWN BY: RPS — DRAWING NUMBER: Figure 3-3 — REV. NO.: C
DATE: — CHECKED BY:
LOCATION: 347-185 — APPROVED BY:

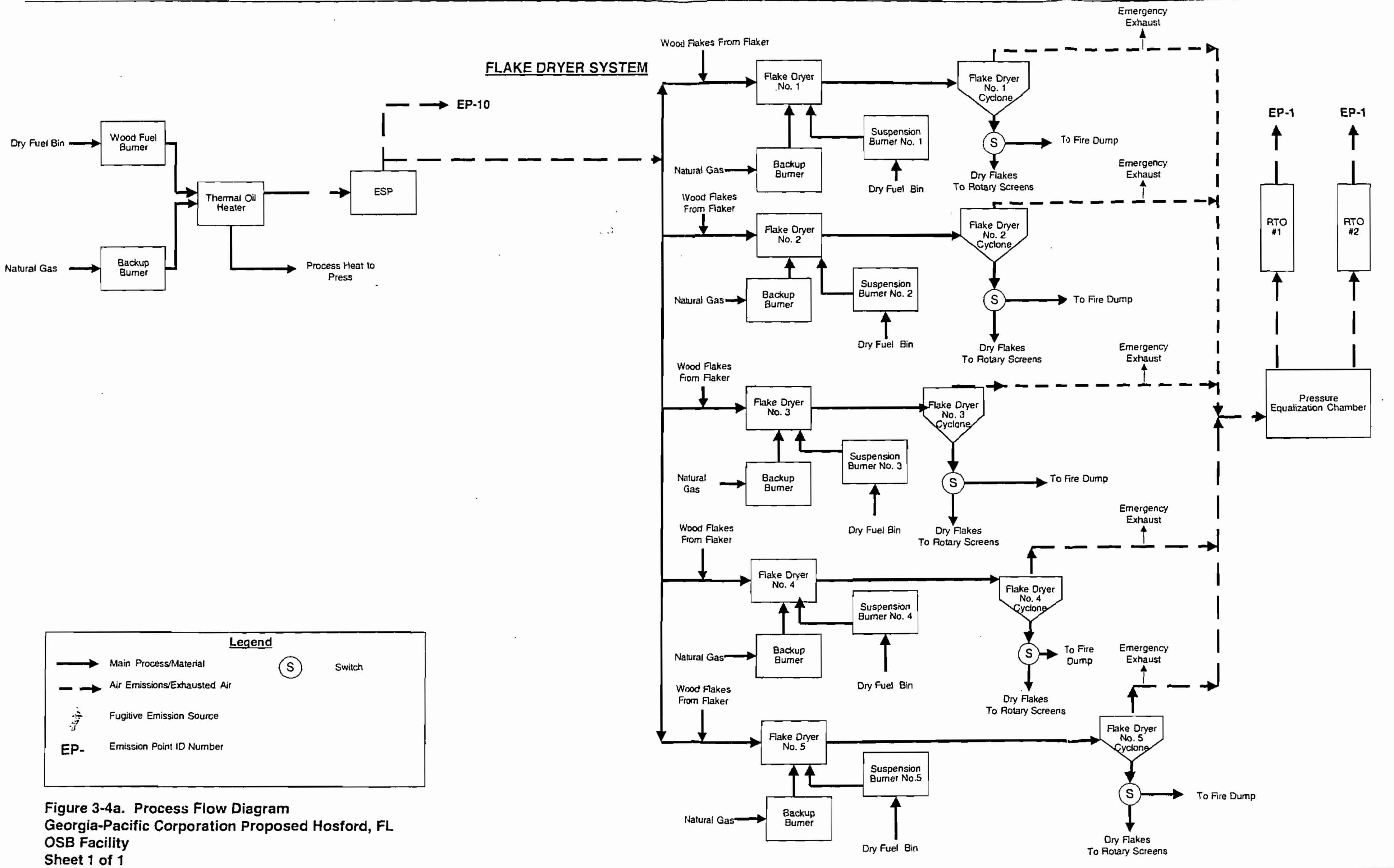


Figure 3-4a. Process Flow Diagram
Georgia-Pacific Corporation Proposed Hosford, FL
OSB Facility
Sheet 1 of 1

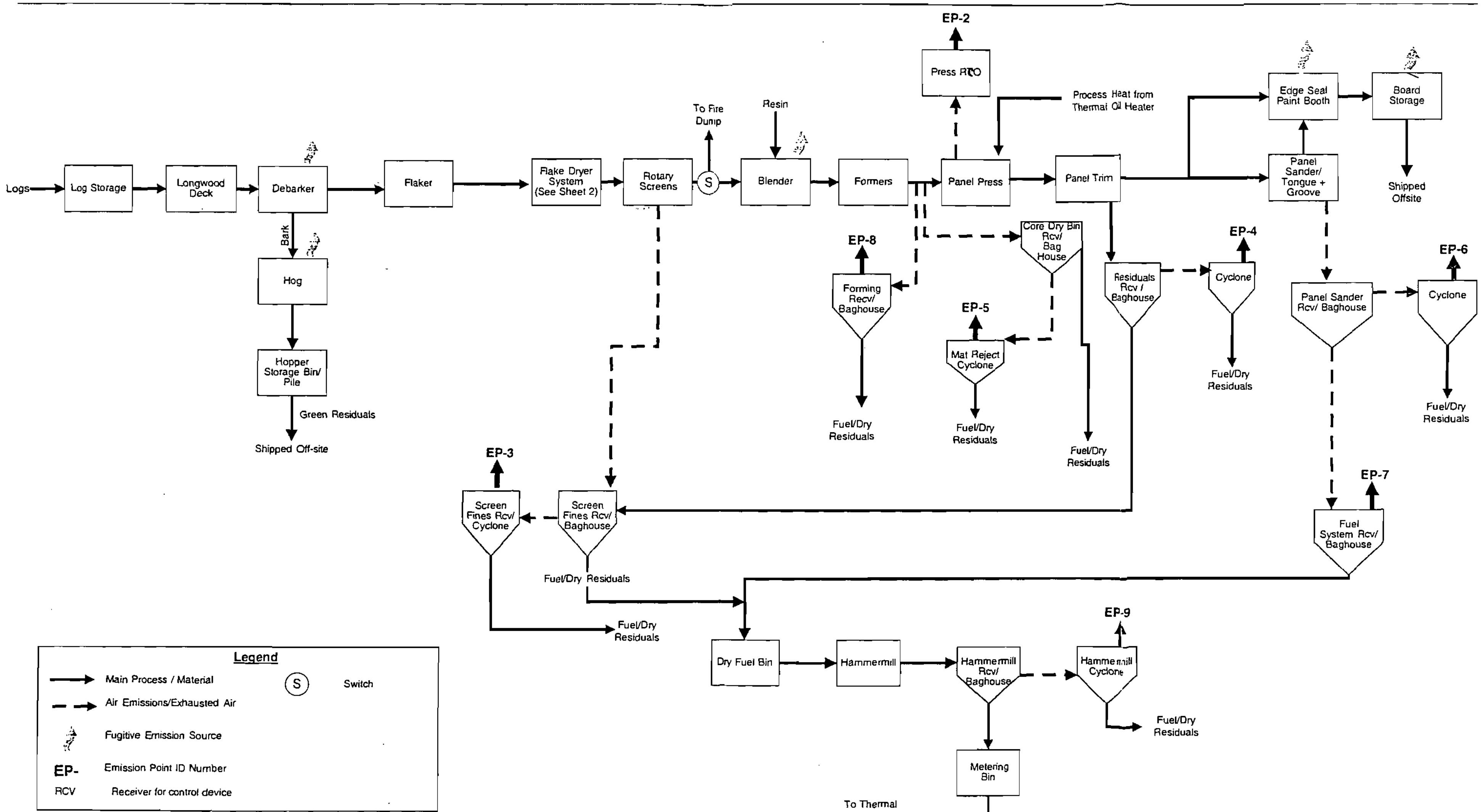


Figure 3-4b. Process Flow Diagram
Georgia-Pacific Corporation Proposed Hosford, FL OSB Facility
Sheet 1 of 1

The hot exhaust from the burner combines with ambient air pulled through by the dryer's pneumatic system to dry the flakes. The amount of dilution air, and resulting gas temperature, are dependent on the dryer operating rate, wood moisture content, desired moisture content of the furnish, etc. Air pollutant emissions associated with the drying operation will include products of wood fuel combustion, such as particulate matter (PM), volatile organic compounds (VOCs), carbon monoxide (CO), nitrogen oxides (NO_x), and sulfur dioxide (SO_2). They will also include additional PM, VOCs, CO, and formaldehyde, which are produced in the wood drying process.

The dried wood flakes will be blended with resin and wax and will then be placed as a mat on the forming line in layers oriented at right angles to provide structural integrity. The mat will then be moved into the thermal oil-heated press, where it will be compressed and heated to bond the resin to the flakes. The thermal oil will be heated to the appropriate temperature in a separate system, consisting of two, wood fuel, suspension-type burners. During normal operations, the exhaust gases from the thermal oil system burners will be routed through the dryer system. Air pollutant emissions associated with the board press operation will include PM, VOCs, CO, NO_x and formaldehyde.

The Thermal Oil Heater uses its own gas or sanderdust burners to heat the oil circulating within the press. An electrostatic precipitator (ESP) controls the Thermal Oil Heater exhaust during periods of burning sanderdust fuel. Once the exhaust passess through the ESP, it is conveyed to the flake dryers and to their subsequent RTOs. If the dryers are experiencing a malfunction or are not operating normally (*e.g.,* start-up or shut down), then the ESP exhuast will be vented to the atmosphere through the ESP stack, and not be conveyed to the flake dryers. Air pollutant emissions associated with the thermal oil heater operation will include PM, VOCs, CO, NO_x and trace amounts of SO_2 and HAPs.

The pressed mats will be cut to size, cooled, and the edges will be sprayed with sealant to prevent swelling. The finished OSB will then be packed and shipped off-site. Dry end material will either be burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Numerous material handling operations, which represent both point sources and fugitive emission sources, will be associated with the production of the OSB. Those operations that can be characterized as point sources include the screen fines with saw trim transfer pneumatics, saw trim and finishing line pneumatics, materials reject and flying saw pneumatics, specialty saw and sander pneumatics, fuel system pneumatics, forming bin pneumatics, and hammermill system pneumatics. The pollutant emissions from these operations are limited to PM. Fugitive sources of PM include the bark handling (batch drops and wind erosion from storage piles), paved roads, debarkers, bark hog, and edge-sealing of finished boards.

Additional fugitive emission sources of VOCs and/or formaldehyde include the resin storage tanks, blend house, and finished product storage.

The dryers and press will be controlled by three regenerative thermal oxidizers (RTOs). Two of the RTOs will be dedicated to the dryers and the third will control emissions from the press. Multiclones will precede the dryer RTOs. As mentioned above, an ESP controls emissions from the thermal oil system. During normal operations, the exhaust gases from the thermal oil system burners will be routed through the dryer system where they, along with the exhaust gases from the dryers, will pass through the multiclones and RTOs prior to exiting to the atmosphere. Particulate matter emissions resulting from material handling will be controlled by a series of bag filters.

4. EMISSION RATES

The methodologies used to quantify emissions for the proposed emission units to be installed at the Hosford OSB Plant are summarized in this section of the permit application. The emission rates are calculated for all point and fugitive emission sources, although only point source emissions have to be considered in the evaluation of PSD applicability. The detailed emission calculations, as well as the supporting documentation from the vendor, are contained in Attachment B. It should be noted that the vendor sheets are titled, "Fordyce, Arkansas". Georgia-Pacific currently has another, nearly identical facility under operation near Fordyce. The emission estimates provided by the vendor apply to both Fordyce and Hosford.

The estimated hourly and annualized emission rates are summarized in Table 4-1.

4.1 EP-1 Dryers

The five dryers will be equipped with TherMec Burners (suspension-type). With the exception of sulfur dioxide, the emission rates are supplied by the vendor and take into account control by the multiclones and RTOs. Some of the amended emission rates are based on actual emissions information from a similar G-P facility located in Fordyce, Arkansas. FDEP determined RTO removal efficiencies of 95%, 95%, and 75% as BACT for particulate matter, volatile organic compounds, and carbon monoxide, respectively. Emission estimates for sulfur dioxide (for the burners associated with the dryers and thermal oil system) are made based on wood fuel combustion factors contained in the US EPA emission estimation document, AP-42. G-P estimated emission rates for the 600 MMsf/yr level of production in some cases, by multiplying the permitted limit for the 475 MMsf/yr in the 2000 PSD permit by the ratio of proposed production to permitted production (*i.e.,* 600/475 = 1.26). G-P reviewed emission test results for our Fordyce, AR facility for formaldehyde. G-P applied the emission factor from these tests for the Hosford calculations.

4.2 EP-2 Press

Emissions information originally used for the press in the 2000 PSD application for this source was supplied by the vendor based on tests performed at a similar Louisiana-Pacific (L-P) plant located in Hanceville, Alabama and the current permit limit. The vendor scaled the L-P test values by the ratio of the production rates between the two facilities. Some of the amended emission rates are based on actual emissions information from a similar G-P facility located in Fordyce, Arkansas. The G-P OSB Plant will have a production level of 600 MMSF/year, while the L-P tests were conducted at a production level of 350 MMSF/year. FDEP determined RTO removal efficiencies of 75%, 90%, and 75% as BACT for particulate matter, volatile organic compounds, and carbon monoxide, respectively. G-P proposes to install an RTO/RCO for this source.

4.3 EP-3 - EP-9 Material Handling Sources

Two methodologies are used in estimating particulate matter emissions for the bag filters. First, emission estimates are made using material throughput rates and a removal efficiency of 99.96 percent. The second methodology utilizes air flow rates and assumes a particulate matter loading of 0.01 or 0.005 grain per dry standard cubic foot (gr/dscf) (as specified in current construction permit) exiting the bag filters. Both sets of calculations are included in Attachment B. The vendor is only willing to guarantee the higher of the two values for each of the sources.

Table 4-1 goes here

4.4 EP-10 Thermal Oil System

The thermal oil system, used to heat the press, will be comprised of two thermal oil heaters. Each thermal oil heater will contain one wood-fired burner and one natural gas-fired burner. The wood-fired burners will have a capacity of 40 MMBtu/hr, while the natural gas burners will have a capacity of 30 MMBtu/hr. Each of the heaters will be controlled independently. Neither heater can be fired simultaneously on wood and natural gas. The plant will be able to operate both heaters simultaneously on wood or natural gas. Also, one heater could be fired on wood, while the other is fired on natural gas. Therefore, the maximum hourly heat input rate to the heaters will not exceed 80 MMBtu/hr under any of the firing combinations.

G-P calculated emissions for PM with the ESP manufacturer's guarantee. The guarantee meets both New Source Performance Standards (NSPS) and Best Available Control Technology (BACT). The source is also regulated for HAP emissions for the proposed Process Heaters and Boilers MACT (40 CFR DDDD). This ruls has not yet been published as a final rule in the Federal Register. Once published, the compliance data for any HAP emission limits will be 3 years from the published date. G-P estimated emissions for all other pollutants using AP-42 emission factors for wood and gas firing.

4.5 Fugitive Emission Sources

While not required in evaluating PSD applicability, emission estimates are made for fugitive sources of PM, VOCs, and formaldehyde. Fugitive sources of PM include the bark handling (batch drops and wind erosion from storage piles), paved and unpaved roads, debarkers, bark hog, and edge-sealing of finished boards. Fugitive emission sources of VOCs and/or formaldehyde include the resin storage tanks, blend house, and finished product storage. The emissions for the fugitive sources are estimated using material balance, AP-42 emission factors, and Version 4.0 of the EPA TANKS program.

5. REGULATORY APPLICABILITY

5.1 PSD Applicability

The PSD regulatory program is contained in 40 CFR 52.21. Since emissions for at least regulated pollutant will exceed 250 tons per year, the plant will be constructed as a "major stationary source", subject to PSD permitting requirements.

The estimated emissions are summarized and compared to the PSD significant increase levels in Table 5-1. The proposed plant will be subject to PSD review for total suspended particulate matter (TSP), particulate matter less than 10 microns in diameter (PM_{10}), ozone (based on a significant increase in VOC emissions), CO, and NO_x.

5.2 NSPS Applicability

A few of the emission sources are potentially subject to the New Source Performance Standards (NSPS), as defined in 40 CFR 60, based on construction date. However, as described below, based on an analysis of the individual NSPS, none of the sources are found to be subject to regulation.

Dryers, NSPS Subparts Db and Dc

NSPS Subpart Db applies to steam generating units, with a capacity greater than 100 MMBtu/hr, commencing construction after June 19, 1984. Subpart Dc is applicable for steam generating units, with a capacity of 100 MMBtu/hr or less, but greater than 10 MMBtu/hr, commencing construction after June 9, 1989. Depending on whether the dryers are considered individually or jointly, Subparts Db and Dc are potentially applicable.

The issue of applicability of NSPS Subparts Db and Dc has been evaluated in the past with regard to process dryers. In a memorandum, dated November 17, 1992, US EPA recognized that there are both similarities and differences between traditional steam generating units and process dryers. In this memorandum, US EPA concludes that NSPS Subparts Db and Dc do not apply to process dryers. A copy of the memorandum is included in Attachment C.

Thermal Oil System, NSPS Subpart Dc

As stated above, Subpart Dc is applicable for steam generating units, with a capacity of 100 MMBtu/hr or less, but greater than 10 MMBTU/hr, commencing construction after June 9, 1989. As stated previously, during normal operations, the combustion products from the burners associated with the thermal oil heat exchangers combine with outside air to provide heat to the flake dryers. As such, the combustion products are intermixed and come into direct contact with the dryers' heat transfer medium.

Table 5-1. PSD Applicability Summary

Emission Source	Emission Point Number	Emissions (tons per year)						
		TSP	PM_{10}	VOC	CO	NO_x	SO_2	Pb
Dryers (multiclones/RTO)	EP-1	187	187	349.1	185.9	332.0	30.7	–
Press (RTO)	EP-2	15.5	15.5	55.3	40.4	59.2	–	–
Screen Fines with Saw Trim Transfer (Bag Filter)	EP-3	11.6	11.6	–	–	–	–	–
Saw Trim/Finishing Line (Bag Filter)	EP-4	5.9	5.9	–	–	–	–	–
Mat Reject/Flying Saw (Bag Filter)	EP-5	10.0	10.0	–	–	–	–	–
Specialty Saw/Sander (Bag Filter)	EP-6	9.7	9.7	–	–	–	–	–
Fuel System (Bag Filter)	EP-7	1.9	1.9	–	–	–	–	–
Forming Bins (Bag Filter)	EP-8	8.6	8.6	–	–	–	–	–
Hammermill System (Bag Filter)	EP-9	11.6	11.6	–	–	–	–	–
Thermal Oil System (ESP)[1]	EP-10	35	35	8.60	529.50	58.40	2.90	0.0006
TOTAL		296.8	296.8	413.0	755.8	449.6	33.6	0.0006
PSD Significance Level		25	15	40	100	40	40	0.6

[1] During normal operation, source exhaust exits with the dryers' exhaust via EP-1; emission estimates for EP-1 include this source. Annual average estimates provided for this source are extreme overestimates given fact that these emissions only occur during a bypass.

Fugitive Emission Sources (not included in PSD applicability determination):

	PM/PM_{10} (tpy)	VOC (tpy)
Roads	4.54	-------
Bark Handling	0.2	-------
Debarker and Hog	0.2	-------
Edge sealing	0.032	-------
Resin storage tanks	-------	0.3
Blend House	-------	0.4
Finished product storage	-------	0.2
Total	5.0	0.9

The key point in determining applicability of Subpart Dc is hinged upon the existence of intermixing of combustion gases and the heat transfer medium, as expressed clearly in US EPA's 1992 determination memorandum (see Attachment C). While it is true that the thermal oil will be indirectly heated, under normal operations the final combustion gases are intermixed and come into "direct" contact with the wood flake dryers' heat transfer medium. As such, the thermal oil system would not be subject to NSPS Subpart Dc under normal operating conditions.

A possible exception is the case where the combustion gases from the thermal oil suspension burners exit through the ESP stack, as opposed to being routed to the dryers. In order to insure that the system meets the requirements when operating in bypass mode, an electrostatic precipitator and continuous opacity monitor will be installed. Also, daily records will be maintained of fuel usage as required under 40 CFR 60.48c(g).

Resin Storage Tanks, NSPS Subpart Kb

NSPS Subpart Kb applies to storage tanks, constructed after July 23, 1984, with a volume of 40 cubic meters (m^3) or greater, storing volatile organic liquids. The storage tanks to be installed at Hosford will have a capacity of 10,000 gallons, or approximately 38 m^3. As such, these tanks will not be subject to NSPS Subpart Kb.

5.3 NESHAP Applicability

Section 112(d) of the Clean Air Act, as amended in November 1990, requires that the US EPA, "promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air listed for regulation...". These National Emission Standards for Hazardous Air Pollutants (NESHAPs), to be published in 40 CFR 63, are to be based on the Maximum Achievable Control Technology (MACT). The US EPA proposed a MACT standard for the building products sector, including standards for HAP sources at oriented strandboard plants in the Plywood and Composite Wood Product (PCWP) MACT (see Federal Register January 9, 2003 (68 FR 1276). Those standards have been signed by USEPA, but have not yet been published in the Federal Regster. Furthermore, there are no existing NESHAPs (40 CFR 61) applicable for this type of facility.

Georgia-Pacific reviewed the rule and preamble of the signed PCWP NESHAP. The MACT standards define a source with a final 112(g) determination that began construction before the PCWP proposal date is an existing source for 112(d) purposes. Thus, the proposed Hosford plant will be required to comply with the promulgated existing source MACT standards by the existing source compliance deadline (*i.e.,* 3 years and 60 days after publication in the Federal Register). The emission limits included in the 2000 FEDP 112(g) determination are more stringent than the signed PCWP NESHAP.

Under Section 112(g), the Maximum Achievable Control Technology limitation for new sources is defined in 40 CFR 63.41 as:

> *"...the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction , and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source."*

The RTOs proposed for installation on the dryers and press are estimated to be at least 90% efficient in the removal of formaldehyde. As descibed in Attachment B, the total formaldehyde emissions, from all sources, are over the 10-ton-per-year threshold for triggering 112(g) applicability.

The proposed BACT for the dryers and press (see Section 8), regenerative thermal oxidation, satisfies the 112(g) MACT requirement for formaldehyde from these sources. The remaining sources, the thermal oil system (in bypass mode), the blend house, and finished product storage, are very minimal sources that are not typically controlled.

6. ADDITIONAL IMPACTS AND CLASS I AREAS ANALYSIS

The PSD regulations require that applicants address additional impacts that may result from the proposed modification or installation. The additional impacts analysis addresses growth, impacts on soils and vegetation, and the potential for visibility impairment. In addition, applicants are required to address potential impacts in Class I areas. Class I areas are areas of special national or regional value from a natural, scenic, recreational, or historic perspective. The PSD regulations provide for special protection of these areas.

If a proposed major source or major modification may affect a Class I area, PSD regulations require the reviewing authority to provide written notification to the Federal Land Manager (FLM). The meaning of the term "may affect" is interpreted by the US EPA to include all major sources or modifications located with 100 km of a Class I area. Two Class I areas, the Bradwell Bay and St. Marks National Wilderness Areas (NWAs), are located within 100 km of the proposed site. The Bradwell Bay and St. Marks NWAs are located approximately 30 and 60 km southeast of the site, respectively.

The results of the Class I area increment analysis are summarized in Section 7 of this report, while the assessment of air quality related values (AQRVs) and other impacts (*e.g.*, growth, visibility, etc.) is included as Attachment E. The results of the analysis indicate that the proposed plant will not have an adverse impact on any of these parameters.

7. AIR QUALITY ANALYSIS

An applicant for a PSD permit is required to conduct an air quality analysis to determine the ambient impacts associated with the construction and operation of the proposed source. The primary purpose is to demonstrate that new emissions will not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) or a PSD increment.

The results of the air quality analysis are contained in Attachment F. The facility, as proposed, will not cause or contribute to a violation of the NAAQS or PSD increments.

8. BACT ANALYSIS

As part of this PSD permit application, a Best Available Control Technology (BACT) analysis is required. The requirement is set forth in the PSD regulations at 40 CFR 52.21(b)(12):

> "*... an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source...which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable...*"

For this permit application, a BACT analysis is required for particulate matter (TSP and PM_{10}), volatile organic compounds, carbon monoxide, and nitrogen oxides.

8.1 Technical Approach

The BACT analysis is based on the "top-down" approach outlined in US EPA's December 1, 1987 policy memorandum, and their "New Source Review Workshop Manual". The steps followed for each pollutant/source combination are as follows:

- Characterize the emission stream;
- Identify all potential control options;
- Evaluate and reject infeasible options;
- Evaluate the economic, environmental, and energy impacts associated with the most effective option(s);
- Document the BACT determination.

8.2 Information Sources for Potential Control Options

A comprehensive review of potential control technologies was conducted, utilizing the following sources:

- The BLIS database (the RACT/BACT/LAER Clearinghouse);
- Pollution control technology vendors;
- US EPA control technology documents;
- Experts familiar with both the OSB manufacturing industry; and
- G-P experience with similar pollution control technologies in OSB manufacturing.

8.3 BACT Determination

The results of the full BACT analysis are contained in Attachment G.

For the dryers, the following, potential controls are identified:

- Regenerative thermal oxidation (RTO) with particulate matter control (controls VOCs, PM, and CO)
- Regenerative catalytic oxidation (RCO) with particulate matter control (controls VOCs, PM, and CO)
- Biofilter with particulate matter control (controls VOCs, PM, and CO)
- Recycle system with indirect heat exchange and particulate matter control (controls VOCs, PM, and CO)
- Wet electrostatic precipitator (controls PM, and potentially controls VOCs)
- Wet scrubber (controls PM, and potentially controls VOCs)
- Selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) (controls NO_x)

Biofiltration technology is limited to gas streams which can be consistently maintained at a temperature less than 105 °F. The vendor predicts that the exit temperature from the dryers is in the range of 265 °F. As such, biofiltration technology is found to be technically infeasible for the dryers. SCR and SNCR are also found to be technically infeasible due to temperature constraints (both require a higher temperature and longer residence time). Recycling of the dryer exhaust represents an example of a process change that eliminates the need for end-of-the-pipe control. Although the system is based on proven components, the higher temperature heat exchanger necessary to transfer heat from the heat source to the ambient air used to dry the wood requires costly materials of construction. As such, this technology is eliminated from further consideration on the basis of engineering and cost considerations. Of the remaining technologies, multiclones, followed by an RTO, represent the most efficient control for VOCs, PM, and CO. As such, this technology is proposed as BACT for the dryers.

For the board press, the technologies considered are the same as those considered for the dryers, although multiclones are not considered in conjunction with the RTO/RCO due to the fact that PM emissions from the press are much lower and some degree of control (approximately 75%) is achieved with the RTO alone. In addition, biofilters are considered technically feasible for the press due to the lower operating temperature for the press. The RTO/RCO is found to be the most efficient control device and is proposed as BACT for the board press.

For the thermal oil system, an electrostatic precipitator is proposed to control particulate matter. During normal operations, the exhaust from the burners associated with the thermal oil system will exit with the exhaust from the dryers through the multiclones and RTO after passing through the ESP. As discussed in the BACT analysis (Attachment G), the combined particulate matter control efficiency from the multiclones and RTO is expected to be 90%. In bypass mode, the thermal oil system exhaust will still pass through the ESP for an expected control efficiency for particulate matter of 82 percent.

For the material handling sources, bagfilter-type dust collectors are proposed as BACT. For these sources, the vendor has provided information showing that these devices should be in the range of 98.35 to 99.96 percent efficient in the removal of particulate matter, depending on the source and emission estimation method used.

ATTACHMENT A
Permit Application Forms

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project: • subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or • where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or • at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility. **Air Operation Permit** – Use this form to apply for: • an initial federally enforceable state air operation permit (FESOP); or • an initial/revised/renewal Title V air operation permit. **Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option)** – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Georgia-Pacific Corporation**	
2. Site Name: **Georgia-Pacific Hosford OSB Plant**	
3. Facility Identification Number: **0770010-001**	
4. Facility Location: Street Address or Other Locator: **State Route 65** City: **Hosford** County: **Liberty** Zip Code: **32334**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☐ Yes ☒ No

Application Contact

1. Application Contact Name: **Mr. Paul Vasquez, Senior Manager, Env. Affairs, Wood Products**
2. Application Contact Mailing Address... Organization/Firm: **Georgia-Pacific Corporation** Street Address: **55 Georgia-Pacific Plaza – 17th Floor** City: **Atlanta** State: **GA** Zip Code: **30303**
3. Application Contact Telephone Numbers... Telephone: **(404) 652-3564** ext. Fax: **(404) 232-4386**
4. Application Contact Email Address: **pjvasque@gapac.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	7-16-04
2. Project Number(s):	0770010-002-AC
3. PSD Number (if applicable):	PSD-FL-282 A
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

☒ Air construction permit.

Air Operation Permit

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

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

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

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

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

Application Comment

APPLICATION INFORMATION

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
001	Five Flake Dryers	AC1A	
002	Panel Press	AC1C	
003	Screen Fines with Saw Trim Transfer	AC1E	
004	Saw Trim/Finishing	AC1E	
005	Mat Reject/Flying Saw	AC1E	
006	Specialty Saw/Sander	AC1E	
007	Fuel System	AC1F	
008	Forming Bins	AC1E	
009	Hammermill System	AC1E	
010	Thermal Oil System	AC1C	
011	Facility Fugitives	AC1E	

Application Processing Fee

Check one: ☒ Attached - Amount: _$7,500.00_______________ ☐ Not Applicable

Application Responsible Official Certification

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

1.	Application Responsible Official Name:
2.	Application Responsible Official Qualification (Check one or more of the following options, as applicable): ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively. ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. ☐ The designated representative at an Acid Rain source.
3.	Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4.	Application Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
5.	Application Responsible Official Email Address:

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: **Mark J. Aguilar** Registration Number: **52248**
2.	Professional Engineer Mailing Address... Organization/Firm: **Georgia-Pacific Corporation** Street Address: **133 Peachtree Street N.E.** City: **Atlanta** State: **GA** Zip Code: **30303**
3.	Professional Engineer Telephone Numbers... Telephone: **(404) 652-4293** ext Fax: **(404) 654-4706**
4.	Professional Engineer Email Address:
5.	Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Mark J. Aguilar
Signature

7/8/04
Date

(seal)

MARK AGUILAR
No. 52248
STATE OF
SIONAL

*Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **16** East (km) **713.50** North (km) **3369.50**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
3. Governmental Facility Code: **0**	4. Facility Status Code: **C**	5. Facility Major Group SIC Code: **24**	6. Facility SIC(s): **2493**
7. Facility Comment : **Oriented Strandboard Manufacturing**			

Facility Contact

1. Facility Contact Name: **Paul Vasquez, Manager Str Panels Env. Egrng**
2. Facility Contact Mailing Address... Organization/Firm: **Georgia-Pacific Corporation** Street Address: **55 Park Place – 17th Floor** City: **Atlanta** State: **GA** Zip Code: **30303**
3. Facility Contact Telephone Numbers: Telephone: **(404) 652-3564** ext. Fax: **(404) 487-3995**
4. Facility Contact Email Address: **pjvasque@gapac.com**

Facility Primary Responsible Official

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

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

Facility Regulatory Classifications

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

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: **Facility is subject to PSD review**	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
CO	A	N
NOX	A	N
PM	A	N
PM10	A	N
SO2	B	N
VOC	A	N
H095	A	N
HAPS	B	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2.Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4.Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

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

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1.	Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: Fig 3-2 , 3-3 ☐ Previously Submitted, Date:_____
2.	Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: Fig 3-4a 3-4b ☐ Previously Submitted, Date:_____
3.	Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1.	Area Map Showing Facility Location: ☒ Attached, Document ID: Fig 3-1 ☐ Not Applicable (existing permitted facility)
2.	Description of Proposed Construction or Modification: ☒ Attached, Document ID: Application Summary
3.	Rule Applicability Analysis: ☒ Attached, Document ID: Application Summary
4.	List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)
5.	Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): ☒ Attached, Document ID: Attachment B ☐ Not Applicable
6.	Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): ☒ Attached, Document ID: Attachment F ☒ Not Applicable
7.	Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): ☒ Attached, Document ID: Attachment F ☐ Not Applicable
8.	Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): ☒ Attached, Document ID: Attachment F ☒ Not Applicable
9.	Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): ☒ Attached, Document ID:_____ ☐ Not Applicable
10.	Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable (no exempt units at facility)	

Additional Requirements for Title V Air Operation Permit Applications

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

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [1] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section:

Five Flake Dryers

3. Emissions Unit Identification Number: 001

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Flake system controlled by multiclones and two RTOs/TCOs**

EMISSIONS UNIT INFORMATION
Section [1] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Two regenerative thermal oxidizers (RTOs) or thermal catalytic oxidizers (TCOs) that destroy volatile organic compounds by raising the temperature in a retention chamber. PM, CO, formaldehyde and HAPS are also controlled.**
2. Control Device or Method Code(s): **99**

EMISSIONS UNIT INFORMATION
Section [1] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate: **600 mmsf/year**		
3. Maximum Heat Input Rate: **200** million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment: **These values are for all 5 flake dryers total**		

EMISSIONS UNIT INFORMATION
Section [1] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **001**

2. Emission Point Type Code: **3**

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:
There are two stacks associated with the flake dryers, one for each RTO/TCO.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
Panel press vents to an RTO/TCO

5. Discharge Type Code: **V**

6. Stack Height: **180**feet

7. Exit Diameter: **8.5**feet

8. Exit Temperature: **259** °F

9. Actual Volumetric Flow Rate: **171,000** acfm

10. Water Vapor: %

11. Maximum Dry Standard Flow Rate: dscfm

12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates...
Zone: **16** East (km): **713.799**
North (km): **3,369.490**

14. Emission Point Latitude/Longitude...
Latitude (DD/MM/SS)
Longitude (DD/MM/SS)

15. Emission Point Comment:
The flowrate is 171,000 acfm for each stack. The UTMs above are for one stack and the UTMs for the second identical stack is 713.898 km east and 3369.574 km north.

EMISSIONS UNIT INFORMATION
Section [1] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Oven dried ton of wood material processed in the flake dryers.**		
2. Source Classification Code (SCC): **30701001**	3. SCC Units: **Tons processed**	
4. Maximum Hourly Rate: **79.14**	5. Maximum Annual Rate: **693,272**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **The values for all five flake dryers combined**		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [1] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 – CO	099		NS
2 – NOX	024		NS
3 – PM	009	099	NS
4 – PM10	009	099	NS
5 – VOC	099		NS
6 – H095	099		NS
7 – SO2			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control: **75**
3. Potential Emissions: **42.44** lb/hour **185.9** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See attachment B. CO emission come from both the wood fuel and burners and the drying of the flakes themselves.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 42.44 lb/hr	4. Equivalent Allowable Emissions: 42.44 lb/hour 187 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): 62-212.400 (BACT)	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: NO_2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 75.8 lb/hour 332 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 75.8 lb/hr Reference: Manufacturer Model	7. Emissions Method Code: 1
8. Calculation of Emissions: See Attachment B	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: NOx is added from the thermal oil heater burners and the RTO/TCO burners to the NOx from dryers' burners.	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **75.8 lb/hr**	4. Equivalent Allowable Emissions: **75.8** lb/hour **332** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

<u>Potential/Estimated Fugitive Emissions</u>

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **95.4**
3. Potential Emissions: **42.69** lb/hour **187** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **42.69 lb/hr** Reference: **Manufacturer Modeling**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **PM10 values above are for five dryers and the thermal oil heater burners exhaust through the multiclones and RTOs/TCOs. The combined efficiencies from the multicones and RTO/TCO is 95.4%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **42.69 lb/hr**	4. Equivalent Allowable Emissions: **42.69** lb/hour **187** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **95.4**
3. Potential Emissions: **42.69** lb/hour **187** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **42.69 lb/hr** Reference: **Manufacturer Model**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **PM10 values above are for five dryers and the thermal oil heater burners exhaust through the multiclones and RTOs/TCOs. The combined efficiencies from the multicones and RTO/TCO is 95.4%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 42.69 lb/hr	4. Equivalent Allowable Emissions: 42.69 lb/hour 187 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control: **95**
3. Potential Emissions: **79.7** lb/hour **349.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **79.7 lb/hr** Reference: **Manufacturer Model**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **VOC emissions come from the wood fuel burners (Dryers and Thermal Oil System) and from the drying of wood.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 79.7 lb/hr	4. Equivalent Allowable Emissions: 79.7 lb/hour 349.1 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **H095**	2. Total Percent Efficiency of Control: **90**
3. Potential Emissions: **3.2** lb/hour **14.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **3.2 lb/hr** Reference: **Manufacturer Model**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Formaldehyde emissions come from the wood fuel burners (Dryers and Thermal Oil System) and from the drying of the wood.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 3.2 lb/hr	4. Equivalent Allowable Emissions: 3.2 lb/hour 14.1 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7** lb/hour **30.66** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.025 lb/mmbtu** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **SO2 comes from the burning of wood (Dryers and Thermal Oil system.) Emission factor is 0.025 lb/MMBTU.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 7 lb/hr	4. Equivalent Allowable Emissions: 7 lb/hour 30.66 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION
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G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [1] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [1] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a, 3-4b** ☐ Previously Submitted, Date ____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date ____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
   ☐ Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
   ☒ Not Applicable
6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: ____
   Test Date(s)/Pollutant(s) Tested: ____

   ☐ Previously Submitted, Date: ____
   Test Date(s)/Pollutant(s) Tested: ____

   ☐ To be Submitted, Date (if known):__________
   Test Date(s)/Pollutant(s) Tested: ____

   ☐ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [1] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☒ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: _____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: ☒ Not Applicable	

EMISSIONS UNIT INFORMATION
Section [1] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [2] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section:

Five Flake Dryers

3. Emissions Unit Identification Number: 001

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **The presses will have 16 openings to press an 8' x 24' mat of wood flakes. Panel press is controlled by an RTO/TCO**

EMISSIONS UNIT INFORMATION
Section [2] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Two regenerative thermal oxidizers (RTOs) or thermal catalytic oxidizers (TCOs) that destroy volatile organic compounds by raising the temperature in a retention chamber. PM, CO, formaldehyde and HAPS are also controlled.**
2. Control Device or Method Code(s): **99**

EMISSIONS UNIT INFORMATION
Section [2] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate: **600 mmsf/year (3/8 in basis)**		
3. Maximum Heat Input Rate:		
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment:		

EMISSIONS UNIT INFORMATION
Section [2] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **002**		2. Emission Point Type Code: **1**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **Panel press vents to an RTO/TCO.**		
5. Discharge Type Code: **V**	6. Stack Height: **100**feet	7. Exit Diameter: **7.2** feet
8. Exit Temperature: **154** °F	9. Actual Volumetric Flow Rate: **146,000** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **16** East (km): **713.731** North (km): **3,369.574**		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [2] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Press operation**		
2. Source Classification Code (SCC): **30701053**	3. SCC Units: **Thousand Units Produced or Manufactured**	
4. Maximum Hourly Rate: **68.49**	5. Maximum Annual Rate: **600,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Units are 1000 square feet of board produced.**		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [2] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 – CO	099		NS
2 – NOX	024		NS
3 – PM	009		NS
4 – PM10	009		NS
5 – VOC	099		NS
6 – H095	099		NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control: **75**
3. Potential Emissions: **9.2** lb/hour **40.4** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **9.2 lb/hr** Reference: **Manufacturer Test Data**	7. Emissions Method Code: **1**
8. Calculation of Emissions: See Attachment B	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **9.2 lb/hr**	4. Equivalent Allowable Emissions: **9.2** lb/hour **40.4** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

<u>Potential/Estimated Fugitive Emissions</u>

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

1. Pollutant Emitted: NO_2	2. Total Percent Efficiency of Control:
3. Potential Emissions: **13.5** lb/hour **59.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **13.5 lb/hr** Reference: **Manufacturer Test Data**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 13.5 lb/hr	4. Equivalent Allowable Emissions: 13.5 lb/hour 59.2 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **75**
3. Potential Emissions: **3.6** lb/hour **15.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **3.6 lb/hr** Reference: **Manufacturer Test Data**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **3.6** lb/hr	4. Equivalent Allowable Emissions: **3.6** lb/hour **15.5** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **75**
3. Potential Emissions: **3.6** lb/hour **15.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **3.6 lb/hr** Reference: **Manufacturer Test Data**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **3.6** lb/hr	4. Equivalent Allowable Emissions: **3.6** lb/hour **15.5** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control: **95**
3. Potential Emissions: **12.63** lb/hour **55.32** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **12.63 lb/hr** Reference: **Manufacturer Test Data**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **12.63 lb/hr**	4. Equivalent Allowable Emissions: **12.63** lb/hour **55.32** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **H095**	2. Total Percent Efficiency of Control: **90**
3. Potential Emissions: **1.0** lb/hour **4.38** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **1.0 lb/hr** Reference: **Test Data from GP Fordyce Operations**	7. Emissions Method Code: **1**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. **1.0 lb/hr**	4. Equivalent Allowable Emissions: **1.0** lb/hour **4.38** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **BACT**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year

EMISSIONS UNIT INFORMATION
Section [2] of [11]

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [2] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [2] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a, 3-4b** ☐ Previously Submitted, Date ____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date ____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
   ☐ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: ____
   Test Date(s)/Pollutant(s) Tested: ____ ____

   ☐ Previously Submitted, Date: ____
   Test Date(s)/Pollutant(s) Tested: ____ ____

   ☐ To be Submitted, Date (if known):__________
   Test Date(s)/Pollutant(s) Tested: ____ ____

   ☐ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [1] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: ____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: ____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: ____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: ____ ☒ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: ____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ☒ Not Applicable	

EMISSIONS UNIT INFORMATION
Section [1] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [3] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Screen Fines with Saw Trim Transfer**

3. Emissions Unit Identification Number: 003

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: **MAC** Model Number: **144 MCF 153**

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Source controlled by a bagfilter**

EMISSIONS UNIT INFORMATION
Section [3] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Screen fines receiver/baghouse. The one device acts as a bagfilter and also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
Section [3] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1.	Maximum Process or Throughput Rate: **33 thousand lb/hr**		
2.	Maximum Production Rate:		
3.	Maximum Heat Input Rate:	million Btu/hr	
4.	Maximum Incineration Rate:	pounds/hr tons/day	
5.	Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6.	Operating Capacity/Schedule Comment: Throughput is based on 6.3 (sawtrim) & 26.8 (screen fines) thousand pounds/hour		

EMISSIONS UNIT INFORMATION
Section [3] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: 003	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: 132 feet	7. Exit Diameter: 2.1 feet
8. Exit Temperature: 70°F	9. Actual Volumetric Flow Rate: 13,940 acfm	10. Water Vapor: 0.00 %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 16 East (km): 713.861 North (km): 3369.583	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [3] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Sawtrim and fines processed, in tons.**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons processed**	
4. Maximum Hourly Rate: **16.576**	5. Maximum Annual Rate: **145,205**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Sawtrim = 3.15 tons/hr** **Screen fines = 13.4 tons/hr** **SCC based on SIC code 2493 – other – tons processed**		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [3] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.96 %**
3. Potential Emissions: **2.6** lb/hour **11.4** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Actual efficiency estimated at 99.96%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.6 lb/hr**	4. Equivalent Allowable Emissions: **2.6** lb/hour **11.4** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM 10**	2. Total Percent Efficiency of Control: **99.96 %**
3. Potential Emissions: **2.6** lb/hour **11.4** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Actual efficiency estimated at 99.96%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.6 lb/hr**	4. Equivalent Allowable Emissions: **2.6** lb/hour **11.4** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

EMISSIONS UNIT INFORMATION
Section [3] of [11]

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations.**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [3] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [3] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a, 3-4b** ☐ Previously Submitted, Date _____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ☐ Previously Submitted, Date _____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date _____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable
6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ To be Submitted, Date (if known):__________
   Test Date(s)/Pollutant(s) Tested: _____

   ☒ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [3] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☒ Not Applicable	

5. Acid Rain Part Application
- ☐ Certificate of Representation (EPA Form No. 7610-1)
  - ☐ Copy Attached, Document ID: _____
- ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
  - ☐ Attached, Document ID:
  - ☐ Previously Submitted, Date: _____
- ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
  - ☐ Attached, Document ID:
  - ☐ Previously Submitted, Date: _____
- ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date:
- ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section [3] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [4] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Saw Trim/Finishing**

3. Emissions Unit Identification Number: 004

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: **MAC** Model Number: **144 MCF 361**

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Source controlled by a bagfilter**

EMISSIONS UNIT INFORMATION
Section [4] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Saw Trim/Finishing Line receiver/baghouse. The one device acts as a bagfilter and also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
Section [4] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacitv and Schedule

1. Maximum Process or Throughput Rate: **6.3 thousand lb/hr**		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate:	million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment:		

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **004**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **100**feet	7. Exit Diameter: **3.2**feet
8. Exit Temperature: **70**°F	9. Actual Volumetric Flow Rate: **31,360** acfm	10. Water Vapor: **0.00** %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: **16** East (km): **713.625** North (km): **3369.465**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [4] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Saw Trim/Finishing Line processed, in tons.**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons processed**	
4. Maximum Hourly Rate: **1.34**	5. Maximum Annual Rate: **11,738.4**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [4] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **99.9 %**
3. Potential Emissions: **1.34** lb/hour **5.88** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for bag filter based on air flow, grain loading and receiver efficiency yielding a control efficiency of 99.9%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.34 lb/hr**	4. Equivalent Allowable Emissions: **1.34** lb/hour **5.88** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C (BACT)**	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.9 %**
3. Potential Emissions: **1.34** lb/hour **5.88** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for bag filter based on air flow, grain loading and receiver efficiency yielding a control efficiency of 99.9%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.34 lb/hr	4. Equivalent Allowable Emissions: **1.34** lb/hour **5.88** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C (BACT)**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [4] of [11]

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [4] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [4] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☒ Attached, Document ID: **Fig.3-4a, 3-4b** ☐ Previously Submitted, Date ____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date ____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
☒ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
☒ Not Applicable

6. Compliance Demonstration Reports/Records
☐ Attached, Document ID: ____
Test Date(s)/Pollutant(s) Tested: ____

☐ Previously Submitted, Date: ____
Test Date(s)/Pollutant(s) Tested: ____

☐ To be Submitted, Date (if known): ________
Test Date(s)/Pollutant(s) Tested: ____

☒ Not Applicable

Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [4] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☒ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: _____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: ☒ Not Applicable	

EMISSIONS UNIT INFORMATION
Section [4] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [5] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Mat Reject/Flying Saw**

3. Emissions Unit Identification Number: 005

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
Manufacturer: **MAC** Model Number: **144 MCF 494**

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Source controlled by a bagfilter**

EMISSIONS UNIT INFORMATION
Section [5] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Mat Reject/Flying Saw receiver/baghouse. The one device acts as a bagfilter and also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
Section [5] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **1,495 lb/hr**	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: **24** hours/day **52** weeks/year	 **7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment: **Throughput based on 0.05 (mat reject) and 1.44 (flying saw) thousand pounds/hour**	

EMISSIONS UNIT INFORMATION
Section [5] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: 005		2. Emission Point Type Code: 1
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: 132 feet	7. Exit Diameter: 4.0 feet
8. Exit Temperature: 70°F	9. Actual Volumetric Flow Rate: 53,320 acfm	10. Water Vapor: 0.00 %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: 16 East (km): 713.807 North (km): 3369.534		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [5] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Mat Reject/flying saw processed, in tons.**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **0.74**	5. Maximum Annual Rate: **6,548.00**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment ____ of ____

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

EMISSIONS UNIT INFORMATION
Section [5] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **99.9 %**
3. Potential Emissions: **2.28** lb/hour **10.00** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for the receiver and bag filter based on air flow and grain loading yielding a control efficiency of 99.9%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.28 lb/hr**	4. Equivalent Allowable Emissions: **2.28** lb/hour **10** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C. (BACT)**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.9 %**
3. Potential Emissions: **2.28** lb/hour **10.00** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for the receiver and bag filter based on air flow and grain loading yielding a control efficiency of 99.9%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.28 lb/hr**	4. Equivalent Allowable Emissions: **2.28** lb/hour **10** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C. (BACT)**	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

EMISSIONS UNIT INFORMATION
Section [5] of [11]

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations.**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: **BACT**	

EMISSIONS UNIT INFORMATION
Section [5] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [5] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a. 3-4b** ☐ Previously Submitted, Date ____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ☐ Previously Submitted, Date ____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date ____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
   ☒ Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
   ☒ Not Applicable
6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: ____
   Test Date(s)/Pollutant(s) Tested: ____

   ☐ Previously Submitted, Date: ____
   Test Date(s)/Pollutant(s) Tested: ____

   ☐ To be Submitted, Date (if known): ____________
   Test Date(s)/Pollutant(s) Tested: ____

   ☒ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [5] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☒ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: _____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: ☒ Not Applicable	

EMISSIONS UNIT INFORMATION
Section [5] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [6] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Specialty Saw/Sander**

3. Emissions Unit Identification Number: 006

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: **MAC** Model Number: **144 MCF 255**

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Source controlled by a bagfilter**

EMISSIONS UNIT INFORMATION
Section [6] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Specialty Saw/Sander receiver/baghouse. The one device acts as a bagfilter and also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
Section [6] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **5,323 lbs/hr**		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate: million Btu/hr		
4. Maximum Incineration Rate: pounds/hr tons/day		
5. Requested Maximum Operating Schedule:	**24** hours/day	**7** days/week
	52 weeks/year	**8,760** hours/year
6. Operating Capacity/Schedule Comment:		

EMISSIONS UNIT INFORMATION
Section [6] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **006**		2. Emission Point Type Code: **1**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **90** feet	7. Exit Diameter: **2.8** feet
8. Exit Temperature: **70**°F	9. Actual Volumetric Flow Rate: **25860** acfm	10. Water Vapor: **0.00**%
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **16** East (km): **713.628** North (km): **3369.468**		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [6] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Specialty Saw/Sander processed, in tons**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **2.66**	5. Maximum Annual Rate: **23,314.74**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [6] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **99.96 %**
3. Potential Emissions: **2.21** lb/hour **9.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for the receiver and bag filter based on air flow and grain yielding a control efficiency of 99.96%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.21 lb/hr**	4. Equivalent Allowable Emissions: **2.21** lb/hour **9.7** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C. (BACT)**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.96 %**
3. Potential Emissions: **2.21** lb/hour **9.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for the receiver and bag filter based on air flow and grain yielding a control efficiency of 99.96%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.21 lb/hr**	4. Equivalent Allowable Emissions: **2.21** lb/hour **9.7** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C. (BACT)**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [6] of [11]

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.,**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [6] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [6] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a, 3-4b** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ To be Submitted, Date (if known): ___________
   Test Date(s)/Pollutant(s) Tested: _____

   ☒ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [6] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☒ Attached, Document ID: **See Summary** ☐ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: ____ ☐ Not Applicable
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: ____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: ____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: ____ ☒ Not Applicable
5. Acid Rain Part Application
   ☐ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID: ____
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: ____
      ☐ Previously Submitted, Date: ____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: ____
      ☐ Previously Submitted, Date: ____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: ____
      ☐ Previously Submitted, Date: ____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: ____
      ☐ Previously Submitted, Date: ____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: ____
      ☐ Previously Submitted, Date: ____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: ____
      ☐ Previously Submitted, Date:
   ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section [6] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [7] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Fuel System**

3. Emissions Unit Identification Number: 007

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: **MAC** Model Number: **72 AV R7**

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Source controlled by a bagfilter**

EMISSIONS UNIT INFORMATION
Section [7] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Fuel System receiver/baghouse. The one device acts as a bagfilter and also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
Section [7] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **5,323 lb/hr**	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: **24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment:	

EMISSIONS UNIT INFORMATION
Section [7] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: 007		2. Emission Point Type Code: 1
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: W	6. Stack Height: 75 feet	7. Exit Diameter: 0.8 feet
8. Exit Temperature: 70°F	9. Actual Volumetric Flow Rate: 480 acfm	10. Water Vapor: 0.00%
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: 16 East (km): 713.000 North (km): 3369.580		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [7] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Fuel System Processed, in Tons**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **2.66**	5. Maximum Annual Rate: **23,301.6**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [7] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **99.99 %**
3. Potential Emissions: **0.43** lb/hour **1.88** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Actual efficiency estimated at 99.99%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.43**	4. Equivalent Allowable Emissions: **0.43** lb/hour **1.88** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.99 %**
3. Potential Emissions: **0.43** lb/hour **1.88** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Actual efficiency estimated at 99.99%.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.43**	4. Equivalent Allowable Emissions: **0.43** lb/hour **1.88** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [7] of [11]

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.,.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [7] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [7] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☒ Attached, Document ID: **Fig 3-4a, 3-4b** ☐ Previously Submitted, Date ____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date ____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
☒ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____
☒ Not Applicable

6. Compliance Demonstration Reports/Records
☐ Attached, Document ID: ____
Test Date(s)/Pollutant(s) Tested: ____
☐ Previously Submitted, Date: ____
Test Date(s)/Pollutant(s) Tested: ____
☐ To be Submitted, Date (if known): ________
Test Date(s)/Pollutant(s) Tested: ____
☒ Not Applicable
Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [7] of [11]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: ____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: ____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: ____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: ____ ☒ Not Applicable	

5. Acid Rain Part Application
- ☐ Certificate of Representation (EPA Form No. 7610-1)
  - ☐ Copy Attached, Document ID: ____
- ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
  - ☐ Attached, Document ID: ____
  - ☐ Previously Submitted, Date: ____
- ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
  - ☐ Attached, Document ID: ____
  - ☐ Previously Submitted, Date: ____
- ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
  - ☐ Attached, Document ID: ____
  - ☐ Previously Submitted, Date: ____
- ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
  - ☐ Attached, Document ID: ____
  - ☐ Previously Submitted, Date: ____
- ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
  - ☐ Attached, Document ID: ____
  - ☐ Previously Submitted, Date: ____
- ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
  - ☐ Attached, Document ID: ____
  - ☐ Previously Submitted, Date:
- ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section [7] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [8] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)
   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.
2. Description of Emissions Unit Addressed in this Section: **Forming Bins**
3. Emissions Unit Identification Number: 008

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: **MAC** Model Number: **144 MCF 361**
10. Generator Nameplate Rating: MW
11. Emissions Unit Comment: **Source controlled by a bagfilter**

EMISSIONS UNIT INFORMATION
Section [8] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Forming Bins receiver/baghouse. The one device acts as a bagfilter and also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
Section [8] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **1,110 pounds/hr**	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: **24** hours/day **52** weeks/year	 **7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment:	

EMISSIONS UNIT INFORMATION
Section [8] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **008**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **105** feet	7. Exit Diameter: **2.5** feet
8. Exit Temperature: **70**°F	9. Actual Volumetric Flow Rate: **22,940** acfm	10. Water Vapor: **0.00**%
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: **16** East (km): **713.804** North (km): **3369.519**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
Section [8] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Forming Bins Processed, in tons**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **0.555**	5. Maximum Annual Rate: **4,861.8.00**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
Section [8] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **99.9 %**
3. Potential Emissions: **1.96** lb/hour **8.61** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for receiver and bag filter based on air flow and grain yielding a control efficiency of 99.9%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.96 lb/hr**	4. Equivalent Allowable Emissions: **1.96** lb/hour **8.61** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.9 %**
3. Potential Emissions: **1.96** lb/hour **8.61** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Control efficiency for receiver and bag filter based on air flow and grain yielding a control efficiency of 99.9%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.96 lb/hr**	4. Equivalent Allowable Emissions: **1.96** lb/hour **8.61** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

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G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.,.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
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H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
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I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a, 3-4b** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ To be Submitted, Date (if known): ___________
   Test Date(s)/Pollutant(s) Tested: _____

   ☒ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
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Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☒ Not Applicable	

5. Acid Rain Part Application
- ☐ Certificate of Representation (EPA Form No. 7610-1)
  - ☐ Copy Attached, Document ID: _____
- ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date: _____
- ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
  - ☐ Attached, Document ID: _____
  - ☐ Previously Submitted, Date:
- ☒ Not Applicable

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Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
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A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Hammermill System**

3. Emissions Unit Identification Number: 009

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: **MAC** Model Number: **144 MCF 153**

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Source controlled by a bagfilter**

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Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Hammermill System receiver/baghouse. The one device acts as a bagfilter amd also cyclone in one piece of equipment.**
2. Control Device or Method Code(s): **18**

EMISSIONS UNIT INFORMATION
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B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **33,152 lb/hr**		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate: million Btu/hr		
4. Maximum Incineration Rate: pounds/hr tons/day		
5. Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment:		

EMISSIONS UNIT INFORMATION
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C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: 009		2. Emission Point Type Code: 1
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: 132 feet	7. Exit Diameter: 2.2 feet
8. Exit Temperature: 70°F	9. Actual Volumetric Flow Rate: 15,000 acfm	10. Water Vapor: 0.00%
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: 16 East (km): 713.864 North (km): 3369.584		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

EMISSIONS UNIT INFORMATION
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D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Hammermill System Processed, in tons.**		
2. Source Classification Code (SCC): **30700799**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **16.576**	5. Maximum Annual Rate: **145,205.76**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

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

EMISSIONS UNIT INFORMATION
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E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **99.99 %**
3. Potential Emissions: **2.65** lb/hour **11.6** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Actual efficiency estimated at 99.99%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.65 lb/hr**	4. Equivalent Allowable Emissions: **2.65** lb/hour **11.6** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99.99 %**
3. Potential Emissions: **2.65** lb/hour **11.6** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Actual efficiency estimated at 99.99%**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.65 lb/hr**	4. Equivalent Allowable Emissions: **2.65** lb/hour **11.6** tons/year
5. Method of Compliance: **Initial stack test and subsequent visual emission evaluations.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

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G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **40** % Maximum Period of Excess Opacity Allowed: **2** min/hour	
4. Method of Compliance: **Annual Method 9 test and daily observations**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
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H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
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I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

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

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Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: ____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: ____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: ____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: ____ ☒ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: ____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ☒ Not Applicable	

EMISSIONS UNIT INFORMATION
Section [9] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [10] of [11]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section:

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C		**Jan-2005**	**24**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **The thermal oil system to heat the press will be comprised of 2 thermal oil heaters. Each heater is heated by a 40 mmbtu/hr wood fuel burner. A 30 mmbtu/hr gas burner is backup. Each heater is controlled independently. Nether heater can be fired simultaneously on wood or gas. Exhaust gases from the thermal oil heat system pass through a dry ESP. During normal operation, the exhaust from the thermal oil system burners are routed through the dryer system.**

EMISSIONS UNIT INFORMATION
Section [10] of [11]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Electro static precipitator. During normal operations, exhaust from the thermal oil system also passes through the dryer (EU01) exhaust control equipment.**
2. Control Device or Method Code(s): **10**

EMISSIONS UNIT INFORMATION
Section [10] of [11]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **80 mmbtu/hr**		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate:	million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8760** hours/year
6. Operating Capacity/Schedule Comment: **System consists of 2 thermal oil heaters. Each thermal oil heater is equipped with a 40 mmbtu/hr wood fuel burner and a 30 mmbtu/hr natural gas burner (backup). Both fuels cannot be fired simultaneously in a single heater.**		

EMISSIONS UNIT INFORMATION
Section [10] of [11]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **010**	2. Emission Point Type Code: **3**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **EU01 Dryer stacks for normal operation. ESP stack for bypass mode when dryer system is not in normal operations.**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	

5. Discharge Type Code: **V**	6. Stack Height: **138** feet	7. Exit Diameter: **5.5** feet
8. Exit Temperature: **700** °F	9. Actual Volumetric Flow Rate: **29,800** acfm	10. Water Vapor: %

11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **16** East (km): **713,768** North (km): **3,369.591**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment: **ESP stack for thermal oil heater**	

EMISSIONS UNIT INFORMATION
Section [10] of [11]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): **Wood/bark fuel burned as the primary fuel to heat the thermal oil. System is comprised of two identical heaters. Each heater has a 40 mmbtu/hr wood fueled burner.**		
2. Source Classification Code (SCC): **10100902**	3. SCC Units: **Tons Burned (all solid fuels)**	
4. Maximum Hourly Rate: **8.9**	5. Maximum Annual Rate: **77,867**	6. Estimated Annual Activity Factor: **100%**
7. Maximum % Sulfur: **NA**	8. Maximum % Ash: **NA**	9. Million Btu per SCC Unit: **9**
10. Segment Comment:		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): **Natural gas burned as backup fuel. System is comprised of two identical heaters. Each heater has a 30 mmbtu/hr natural gas fired burner.**		
2. Source Classification Code (SCC): **10100601**	3. SCC Units: **Million Cubic Feet Burned (gaseous fuels)**	
4. Maximum Hourly Rate: **0.06**	5. Maximum Annual Rate: **526**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **NA**	8. Maximum % Ash: **NA**	9. Million Btu per SCC Unit: **1000**
10. Segment Comment:		

EMISSIONS UNIT INFORMATION
Section [10] of [11]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 – CO			NS
2 – NOX			NS
3 – PM	011		NS
4 – PM10	011		NS
5 – VOC			NS
6 – SO2			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **48** lb/hour **210** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.6 lb/mmbtu** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Emission factor is 0.6 lb/mmbtu. During normal operation, source exhaust with dryer exhaust via EU01: emission estimates for EU01 include these emissions.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **48 lb/hr**	4. Equivalent Allowable Emissions: **48** lb/hour **210** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **NO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **17.6** lb/hour **77** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **00.22 lb/mmbtu** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Emission factor is 0.22 lb/mmbtu. During normal operation, source exhaust with dryer exhaust via EP-1 : emission estimates for EP-1 include this source.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **17.6 lb/hr**	4. Equivalent Allowable Emissions: **17.6** lb/hour **77** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **82**
3. Potential Emissions: **8** lb/hour **35** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **00.1 lb/mmbtu** Reference: **ESP Manufacturer Guarantee**	7. Emissions Method Code: **4**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Emission factor is 0.1 lb/mmbtu. During normal operation, source exhaust with dryer exhaust via EP-1 : emission estimates for EP-1 include this source.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 8 lb/hr	4. Equivalent Allowable Emissions: 8 lb/hour 35 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **82**
3. Potential Emissions: **8** lb/hour **35** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **00.1 lb/mmbtu** Reference: **ESP Manufacturer Guarantee**	7. Emissions Method Code: **4**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Emission factor is 0.1 lb/mmbtu. During normal operation, source exhaust with dryer exhaust via EP-1 : emission estimates for EP-1 include this source.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 8 lb/hr	4. Equivalent Allowable Emissions: 8 lb/hour 35 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.36** lb/hour **5.9** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.07 lb/mmbtu** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Emission factor is 0.07 lb/mmbtu. During normal operation, source exhaust with dryer exhaust via EP-1 : emission estimates for EP-1 include this source.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.36 lb/hr**	4. Equivalent Allowable Emissions: **1.36** lb/hour **5.9** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **2** lb/hour **8.76** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.025 lb/mmbtu** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Emission factor is 0.025 lb/mmbtu. During normal operation, source exhaust with dryer exhaust via EP-1 : emission estimates for EP-1 include this source.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. **2 lb/hr**	4. Equivalent Allowable Emissions: **2** lb/hour **8.76** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400, F.A.C.**	

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

EMISSIONS UNIT INFORMATION
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G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 40 % Maximum Period of Excess Opacity Allowed: 2 min/hour	
4. Method of Compliance: **Annual Method 9 test**	
5. Visible Emissions Comment: **62-4.070 F.A.C. and 62-212.400, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION
Section [10] of [11]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [10] of [11]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Fig. 3-4a, 3-4b** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attachment D** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ To be Submitted, Date (if known): ___________
   Test Date(s)/Pollutant(s) Tested: _____

   ☐ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☒ Attached, Document ID: **Attachments B-F** ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [10] of [11]

Additional Requirements for Air Construction Permit Applications

1.	Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable
2.	Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable
3.	Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1.	Identification of Applicable Requirements ☐ Attached, Document ID: ____ ☐ Not Applicable
2.	Compliance Assurance Monitoring ☐ Attached, Document ID: ____ ☒ Not Applicable
3.	Alternative Methods of Operation ☐ Attached, Document ID: ____ ☒ Not Applicable
4.	Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: ____ ☒ Not Applicable
5.	Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: ____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date: ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section [10] of [11]

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **Fugitive emissions**

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date: **Jan-2005**	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit? ☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:
2. Control Device or Method Code(s):

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate:	million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	24 hours/day 52 weeks/year	7 days/week 8760 hours/year
6. Operating Capacity/Schedule Comment:		

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **011**	2. Emission Point Type Code: **4**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Fugitive emissions from plant roads and material handling operations.**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:	

5. Discharge Type Code: **F**	6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: **70** °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %

11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: **11.95** feet
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment: **Nonstack Emission Point Ht is weighted average of the following sources: roads, bark hog, debarking and bark handling**	

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Fugitive emissions form plant roads and material handling operations.**		
2. Source Classification Code (SCC): **30788898**		3. SCC Units: **1000 Board Feet**
4. Maximum Hourly Rate: **68.49**	5. Maximum Annual Rate: **600,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

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

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM10	061		EL
PM	061		EL
VOC			

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.95** lb/hour **8.54** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.95 lb/hr**	4. Equivalent Allowable Emissions: **1.95** lb/hour **8.54** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400**	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.95** lb/hour **8.54** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment B**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.95 lb/hr**	4. Equivalent Allowable Emissions: **1.95** lb/hour **8.54** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **62-212.400**	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

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

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **Attachment D** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **Attachment F** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☒ Attached, Document ID: **See Summary** ☐ Not Applicable	

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☒ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☒ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☒ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☒ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: _____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: ☒ Not Applicable	

Additional Requirements Comment

ATTACHMENT B
Emission Calculations & Vendor Documentation

Attachment B
Emission Calculations
Georgia-Pacific, Hosford OSB
Increase to 600 MMSF/year

As appropriate, and as noted, the updated emission rate calculations reference the calculations, filed with the 2000 PSD permit application submittal. In some instances, the original emission estimates were based on models that were executed by MEC, the engineering contractor.

Point Sources

There are two operating scenarios associated with thermal oil heater (TOH) emissions. First, gas streams from the TOH are directed through the dryers. Emissions predicted by the dryer vendor reflect 100% of TOH emissions included in the dryer exhaust. These emissions are presented below.

Source No. 001 (Dryers)

Emission estimates for the dryers, controlled by two regenerative thermal oxidizers (RTOs), were based on the MEC models. The emission rates have been adjusted upwards to coincide with the higher production levels, as described below:

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 33.8 lbs/hour and 148.04 tons/year

These emission rates are scaled up based on the ratio of the currently permitted and proposed production levels

<u>Proposed emissions</u>

33.8 lbs/hour x 600/475 (ratio of production levels) = 42.69 lbs/hour (187 tons/year)

Volatile Organic Compounds

Current, permitted emissions = 63.1 lbs/hour and 276.38 tons/year (this reflects the BACT limit of 95% destruction efficiency of the RTOs)

These emission rates are scaled up based on the ratio of the currently permitted and proposed production levels

<u>Proposed emissions</u>

63.1 lbs/hour x 600/475 (ratio of production levels) = 79.7 lbs/hour (349.1 tons/year)

Carbon Monoxide

Original, permitted emissions = 33.6 lbs/hour and 148 tons/year

<u>Proposed emissions</u>

33.6 lbs/hour x 600/475 (ratio of production levels) = 42.44 lbs/hour (185.9 tons/year)

Sulfur Dioxide

AP-42 factor for firing wood fuel in boilers = 0.025 lb/MMBTU.

Dryer has 5 burners at 40 MMBTU/hr each, for a total of 200 MMBTU/hr

Dryers can also fire natural gas. However, the emissions associated with the burning of natural gas is less than wood.

Thermal oil heater, capable of firing wood dust (combustion products ducted to dryer system) has 2 burners at 40 MMBTU/hr each for a total of 80 MMBTU/hr

Total exiting dryer system = 280 MMBTU/hr

Sulfur dioxide emissions:

280 MMBTU/hr x 0.025 lb/MMBTU = 7 lb/hr (30.66 ton/yr)

Nitrogen Oxides

Current, permitted emissions = 60 lbs/hour and 262.8 tons/year

Proposed emissions

60 lbs/hour x 600/475 (ratio of production levels) = 75.8 lbs/hour (332 tons/year)

Table 1. [3]HAP Emissions by Dryers, Production Rate of 600MMft²/yr

Pollutant	lb/ODT	ODT[1]	Uncontrolled lb/hr	Uncontrolled Ton/yr	Controlled[2] lb/hr	Controlled[2] Ton/yr
Acetaldehyde	0.1722	695,009	13.7	59.9	1.4	6.0
Acrolein	0.1276	695,009	10.1	44.4	1.0	4.4
Benzene	0.0113	695,009	0.9	3.9	0.1	0.4
Cumene	0.0971	695,009	7.7	33.7	0.8	3.4
Formaldehyde	0.4054	695,009	32.2	140.9	3.2	14.1
Methanol	0.1421	695,009	11.3	49.4	1.1	4.9
Methyl ethyl ketone	0.0160	695,009	1.3	5.6	0.1	0.6
Methyl isobutyl ketone	0.0142	695,009	1.1	4.9	0.1	0.5
Phenol	0.0284	695,009	2.3	9.9	0.2	1.0
Propionaldehyde	0.0172	695,009	1.4	6.0	0.1	0.6
THC as carbon	11.0421	695,009	876.1	3837.2	87.6	383.7
Toluene	0.0196	695,009	1.6	6.8	0.2	0.7
m,p-Xylene	0.0169	695,009	1.3	5.9	0.1	0.6

1 – ODT value based on process knowledge and 600MMft2 per year production.
2 – RTO controlled to 90%
3 - Based on AP-42, Section 10.5, Plywood Manufacturing, January 2002, Excel data file. If AP-42 provided an average value and a standard deviation, then the average plus twice the standard deviation was used. If AP-42 only provided an average value and a maximum value, then the maximum value was used. If AP-42 did not provide a maximum value or standard deviation, then the highest appropriate actual NCASI test data point was selected.

The second operating scenario associated with the TOH directs 100% of the emissions to the atmosphere (Source Number 10). Emissions are presented in Table 2 for this case. Gas and Wood fuel factors are presented and the emissions calculated based on either, two–30 MMBtu/hr gas burners, or two–40 MMBtu/hr wood burners.

Table 2. Emission Factors and Rates by Fuel for Thermal Oil Heater

				Emission Rates[a]					Emission Rates [b]		Maximum	
Pollutant	Bark Factors		Ref	lb/hr	tons/yr	Gas Factors		Ref	lb/hr	tons/yr	lb/hr	tons/yr
SO2	0.025	lb/mmbtu	2	2.00E+00	8.76	0.0006	lb/mmbtu	3	0.036	0.157	2.00E+00	8.760
NOx	0.22	lb/mmbtu	2	1.76E+01	77.088	0.2745	lb/mmbtu	3	16.470	72.141	1.76E+01	77.088
PM10	0.1	lb/mmbtu	1	8.00E+00	35.04	0.0075	lb/mmbtu	3	0.447	1.958	8.00E+00	35.040
CO	0.6	lb/mmbtu	2	4.80E+01	210.24	0.0824	lb/mmbtu	3	4.941	21.6	4.80E+01	210.240
VOC	0.017	lb/mmbtu	2	1.36E+00	5.9568	0.0054	lb/mmbtu	3	0.323	1.417	1.36E+00	5.957
HAPS												
Formaldehyde	4.40E-03	lb/mmbtu	2	3.52E-01	1.54176	7.50E-05	lb/mmbtu	3	0.0045	0.0197	3.52E-01	1.542
Benzene	4.20E-03	lb/mmbtu	2	3.36E-01	1.47168	2.10E-06	lb/mmbtu	3	0.000126	0.0006	3.36E-01	1.472
Acrolein	4.00E-03	lb/mmbtu	2	3.20E-01	1.4016						3.20E-01	1.402
Ethane						3.10E-03	lb/mmbtu	3	0.186	0.814	1.86E-01	0.815
Pentane						2.60E-03	lb/mmbtu	3	0.156	0.683	1.56E-01	0.683
Styrene	1.90E-03	lb/mmbtu	2	1.52E-01	0.66576						1.52E-01	0.666
Hexane						1.80E-03	lb/mmbtu	3	0.108	0.473	1.08E-01	0.473
Manganese	1.60E-03	lb/mmbtu	2	1.28E-01	0.56064	3.80E-07	lb/mmbtu	3	0.0000228	0.0001	1.28E-01	0.561
Toluene	9.20E-04	lb/mmbtu	2	7.36E-02	0.322368	3.40E-06	lb/mmbtu	3	0.000204	0.0009	7.36E-02	0.322
Acetaldehyde	8.30E-04	lb/mmbtu	2	6.64E-02	0.290832						6.64E-02	0.291
Nickel	3.30E-05	lb/mmbtu	2	2.64E-03	0.0115632	2.10E-06	lb/mmbtu	3	0.000126	0.0006	2.64E-03	0.012
Zinc	4.20E-04	lb/mmbtu	2	3.36E-02	0.147168	2.90E-05	lb/mmbtu	3	0.00174	0.0076	3.36E-02	0.147
Dichloromethane	2.90E-04	lb/mmbtu	2	2.32E-02	0.101616						2.32E-02	0.102
Lead	4.80E-05	lb/mmbtu	2	3.84E-03	0.0168192	5.00E-07	lb/mmbtu	3	0.00003	0.0001	3.84E-03	0.017
Vanadium						2.30E-06	lb/mmbtu	3	0.000138	0.0006	1.38E-04	0.001
Barium	1.70E-04	lb/mmbtu	2	1.36E-02	0.059568	4.40E-06	lb/mmbtu	3	0.000264	0.0012	1.36E-02	0.060
Naphthalene	9.70E-05	lb/mmbtu	2	7.76E-03	0.0339888	6.10E-07	lb/mmbtu	3	0.0000366	0.0002	7.76E-03	0.034
Phosphorous	2.70E-05	lb/mmbtu	2	2.16E-03	0.0094608						2.16E-03	0.009
Propionaldehyde	6.10E-05	lb/mmbtu	2	4.88E-03	0.0213744						4.88E-03	0.021
1,2-Dibromoethene	5.50E-05	lb/mmbtu	2	4.40E-03	0.019272						4.40E-03	0.019
Phenol	5.10E-05	lb/mmbtu	2	4.08E-03	0.0178704						4.08E-03	0.018
Selenium	2.80E-06	lb/mmbtu	2	2.24E-04	0.0009811						2.24E-04	0.001
Carbon tetrachloride	4.50E-05	lb/mmbtu	2	3.60E-03	0.015768						3.60E-03	0.016
Trichlorofluoromethane	4.10E-05	lb/mmbtu	2	3.28E-03	0.0143664						3.28E-03	0.014
Cobalt	6.50E-06	lb/mmbtu	2	5.20E-04	0.0022776	8.40E-08	lb/mmbtu	3	0.00000504	2.20752E-05	5.20E-04	0.002
Tetrachloroethylene	3.80E-05	lb/mmbtu	2	3.04E-03	0.0133152						3.04E-03	0.013

Table 2. Continued

Pollutant	Bark Factors		Ref	Emission Rates[a] lb/hr	Emission Rates[a] tons/yr	Gas Factors		Ref	Emission Rates [b] lb/hr	Emission Rates [b] tons/yr	Maximum lb/hr	Maximum tons/yr
Antimony	7.90E-06	lb/mmbtu	2	6.32E-04	0.0027682						6.32E-04	0.003
1,2-Dichloropropane	3.30E-05	lb/mmbtu	2	2.64E-03	0.0115632						2.64E-03	0.012
Chlorobenzene	3.30E-05	lb/mmbtu	2	2.64E-03	0.0115632						2.64E-03	0.012
1,1,1-Trichloroethane	3.10E-05	lb/mmbtu	2	2.48E-03	0.0108624						2.48E-03	0.011
Ethyl benzene	3.10E-05	lb/mmbtu	2	2.48E-03	0.0108624						2.48E-03	0.011
Trichloroethene (Trichloroethylene)	3.00E-05	lb/mmbtu	2	2.40E-03	0.010512						2.40E-03	0.011
1,2-Dichloroethane	2.90E-05	lb/mmbtu	2	2.32E-03	0.0101616						2.32E-03	0.010
Chloroform	2.80E-05	lb/mmbtu	2	2.24E-03	0.0098112						2.24E-03	0.010
Xylenes	2.50E-05	lb/mmbtu	2	2.00E-03	0.00876						2.00E-03	0.009
Chloromethane	2.30E-05	lb/mmbtu	2	1.84E-03	0.0080592						1.84E-03	0.008
Arsenic	2.20E-05	lb/mmbtu	2	1.76E-03	0.0077088	2.00E-07	lb/mmbtu	3	0.000012	0.000052	1.76E-03	0.008
Chromium	2.10E-05	lb/mmbtu	2	1.68E-03	0.0073584	1.40E-06	lb/mmbtu	3	0.000084	0.000367	1.68E-03	0.007
Vinyl chloride	1.80E-05	lb/mmbtu	2	1.44E-03	0.0063072						1.44E-03	0.006
Bromomethane	1.50E-05	lb/mmbtu	2	1.20E-03	0.005256						1.20E-03	0.005
Methyl ethyl ketone	5.40E-06	lb/mmbtu	2	4.32E-04	0.0018922						4.32E-04	0.002
Isobutyraldehyde	1.20E-05	lb/mmbtu	2	9.60E-04	0.0042048						9.60E-04	0.004
Copper						8.50E-07	lb/mmbtu	3	0.000051	0.00022338	5.10E-05	0.000
p-Tolualdehyde	1.10E-05	lb/mmbtu	2	8.80E-04	0.0038544						8.80E-04	0.004
Crotonaldehyde	9.90E-06	lb/mmbtu	2	7.92E-04	0.003469						7.92E-04	0.003
o-Tolualdehyde	7.20E-06	lb/mmbtu	2	5.76E-04	0.0025229						5.76E-04	0.003
Hexanal	7.00E-06	lb/mmbtu	2	5.60E-04	0.0024528						5.60E-04	0.002
Phenanthrene	7.00E-06	lb/mmbtu	2	5.60E-04	0.0024528	1.70E-08	lb/mmbtu	3	0.00000102	4.4676E-06	5.60E-04	0.002
Acenaphthylene	5.00E-06	lb/mmbtu	2	4.00E-04	0.001752						4.00E-04	0.002
Cadmium	4.10E-06	lb/mmbtu	2	3.28E-04	0.0014366	1.10E-06	lb/mmbtu	3	0.000066	0.00028908	3.28E-04	0.001
Pyrene	3.70E-06	lb/mmbtu	2	2.96E-04	0.0012965	5.00E-09	lb/mmbtu	3	0.0000003	0.000001314	2.96E-04	0.001
Chromium (VI)	3.50E-06	lb/mmbtu	2	2.80E-04	0.0012264						2.80E-04	0.001
Mercury	3.50E-06	lb/mmbtu	2	2.80E-04	0.0012264	2.60E-07	lb/mmbtu	3	0.0000156	0.000068328	2.80E-04	0.001
Fluorene (fluorine)	3.40E-06	lb/mmbtu	2	2.72E-04	0.0011914	2.80E-09	lb/mmbtu	3	1.68E-07	7.3584E-07	2.72E-04	0.001
Propanal	3.20E-06	lb/mmbtu	2	2.56E-04	0.0011213						2.56E-04	0.001
Anthracene	3.00E-06	lb/mmbtu	2	2.40E-04	0.0010512						2.40E-04	0.001
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	lb/mmbtu	2	3.76E-06	1.647E-05						3.76E-06	0.000
Benzo(a)pyrene	2.60E-06	lb/mmbtu	2	2.08E-04	0.000911						2.08E-04	0.001
Carbazole	1.80E-06	lb/mmbtu	2	1.44E-04	0.0006307						1.44E-04	0.001
Fluoranthene	1.60E-06	lb/mmbtu	2	1.28E-04	0.0005606	3.00E-09	lb/mmbtu	3	0.00000018	7.884E-07	1.28E-04	0.001
Heptachlorodibenzo-p-dioxins	1.60E-06	lb/mmbtu	2	1.28E-04	0.0005606						1.28E-04	0.001

Table 2. Continued

Pollutant	Bark Factors		Ref	Emission Rates[a] lb/hr	Emission Rates[a] tons/yr	Gas Factors		Ref	Emission Rates[b] lb/hr	Emission Rates[b] tons/yr	Maximum lb/hr	Maximum tons/yr
Dichlorobenzene						1.20E-06	lb/mmbtu	3	0.000072	0.00031536	7.20E-05	0.000
Beryllium	1.10E-06	lb/mmbtu	2	8.80E-05	0.0003854						8.80E-05	0.000
Molybdenum						1.10E-06	lb/mmbtu	3	0.000066	0.00028908	6.60E-05	0.000
Acenaphthene	9.10E-07	lb/mmbtu	2	7.28E-05	0.0003189						7.28E-05	0.000
Acetophenone	3.20E-09	lb/mmbtu	2	2.56E-07	1.121E-06						2.56E-07	0.000
2-Nitrophenol	2.40E-07	lb/mmbtu	2	1.92E-05	8.41E-05						1.92E-05	0.000
2,4-Dinitrophenol	1.80E-07	lb/mmbtu	2	1.44E-05	6.307E-05						1.44E-05	0.000
2-Methylnaphthalene	1.60E-07	lb/mmbtu	2	1.28E-05	5.606E-05	2.40E-08	lb/mmbtu	3	0.00000144	6.3072E-06	1.28E-05	0.000
Benzo(j,k)fluoranthene	1.60E-07	lb/mmbtu	2	1.28E-05	5.606E-05						1.28E-05	0.000
4-Nitrophenol	1.10E-07	lb/mmbtu	2	8.80E-06	3.854E-05						8.80E-06	0.000
Benzo(b)fluoranthene	1.00E-07	lb/mmbtu	2	8.00E-06	3.504E-05						8.00E-06	0.000
Benzo(g,h,i)perylene	9.30E-08	lb/mmbtu	2	7.44E-06	3.259E-05						7.44E-06	0.000
Indeno(1,2,3,c,d)pyrene	8.70E-08	lb/mmbtu	2	6.96E-06	3.048E-05						6.96E-06	0.000
Octachlorodibenzo-p-dioxins	6.60E-08	lb/mmbtu	2	5.28E-06	2.313E-05						5.28E-06	0.000
Benzo(a)anthracene	6.50E-08	lb/mmbtu	2	5.20E-06	2.278E-05						5.20E-06	0.000
Pentachlorophenol	5.10E-08	lb/mmbtu	2	4.08E-06	1.787E-05						4.08E-06	0.000
Benzoic Acid	4.70E-08	lb/mmbtu	2	3.76E-06	1.647E-05						3.76E-06	0.000
Chrysene	3.80E-08	lb/mmbtu	2	3.04E-06	1.332E-05						3.04E-06	0.000
Benzo(k)fluoranthene	3.60E-08	lb/mmbtu	2	2.88E-06	1.261E-05						2.88E-06	0.000
2-Chlorophenol	2.40E-08	lb/mmbtu	2	1.92E-06	8.41E-06						1.92E-06	0.000
2,4,6-Trichlorophenol	2.20E-08	lb/mmbtu	2	1.76E-06	7.709E-06						1.76E-06	0.000
Dibenzo(a,h)anthracene	9.10E-09	lb/mmbtu	2	7.28E-07	3.189E-06						7.28E-07	0.000
Benzo(e)pyrene	2.60E-09	lb/mmbtu	2	2.08E-07	9.11E-07						2.08E-07	0.000
Trichlorobiphenyl	2.60E-09	lb/mmbtu	2	2.08E-07	9.11E-07						2.08E-07	0.000
Tetrachlorobiphenyl	2.50E-09	lb/mmbtu	2	2.00E-07	8.76E-07						2.00E-07	0.000
2-Chloronaphthalene	2.40E-09	lb/mmbtu	2	1.92E-07	8.41E-07						1.92E-07	0.000
Pentachlorodibenzo-p-dioxins	1.50E-09	lb/mmbtu	2	1.20E-07	5.256E-07						1.20E-07	0.000
Pentachlorobiphenyl	1.20E-09	lb/mmbtu	2	9.60E-08	4.205E-07						9.60E-08	0.000
Dichlorobiphenyl	7.40E-10	lb/mmbtu	2	5.92E-08	2.593E-07						5.92E-08	0.000
Hexachlorobiphenyl	5.50E-10	lb/mmbtu	2	4.40E-08	1.927E-07						4.40E-08	0.000
Perylene	5.20E-10	lb/mmbtu	2	4.16E-08	1.822E-07						4.16E-08	0.000
Pentachlorodibenzo-p-furans	4.20E-10	lb/mmbtu	2	3.36E-08	1.472E-07						3.36E-08	0.000
Hexachlorodibenzo-p-furans	2.80E-10	lb/mmbtu	2	2.24E-08	9.811E-08						2.24E-08	0.000
Decachlorobiphenyl	2.70E-10	lb/mmbtu	2	2.16E-08	9.461E-08						2.16E-08	0.000
Monochlorobiphenyl	2.20E-10	lb/mmbtu	2	1.76E-08	7.709E-08						1.76E-08	0.000

Table 2. Continued

Pollutant	Bark Factors		Ref	Emission Rates[(a)] lb/hr	Emission Rates[(a)] tons/yr	Gas Factors	Ref	Emission Rates [(b)] lb/hr	Emission Rates [(b)] tons/yr	Maximum lb/hr	Maximum tons/yr
2,3,7,8 - Tetrachlorodibenzo-p-furans	9.00E-11	lb/mmbtu	2	7.20E-09	3.154 E-08					7.20E-09	0.000
Octachlorodibenzo-p-furans	8.80E-11	lb/mmbtu	2	7.04E-09	3.084 E-08					7.04E-09	0.000
Heptachlorobiphenyl	6.60E-11	lb/mmbtu	2	5.28E-09	2.313 E-08					5.28E-09	0.000
2,3,7,8 - Tetrachlorodibenzo-p-dioxins	8.60E-12	lb/mmbtu	2	6.88E-10	3.013 E-09					6.88E-10	0.000
							Total HAPS			2.2	8.87

(a) Emission rates reflect maximum hourly design on 80 MMBtu/hr on bark

(b) Emission rates reflect maximum hourly design on 60 MMBtu/hr on gas

Annual Emissions reflect hourly bark rates for 8,760 hours / yr.

References:

(1) ESP Manufacturer guarantee

(2) Compilation of Emission Factors, AP-42 (EPA, 2003). Factors in lb/ton units were converted to lb/MMBtu units using a 4500 Btu/lb value

(3) Compilation of Emission Factors, AP-42 (EPA, 1998).

Source No. 02 (Press)

Emission estimates for the press, controlled by a regenerative thermal oxidizer/thermal catalytic oxidizer (RCO), were based on MEC-supplied test data for a similar facility operated by Louisiana-Pacific Corporation in Hanceville, Alabama. The data for Hanceville were based on a throughput of 350 MMSF/year; in the original application for Hosford, these values were scaled up to 475 MMSF/year; this submittal scales these numbers up to the proposed production level of 600 MMSF/year, as follows

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 2.8 lbs/hour and 12.4 tons/year

These emission rates are scaled up based on the ratio of the currently permitted and proposed production levels

Proposed emissions

2.8 lbs/hour x 600/475 (ratio of production levels) = 3.6 lbs/hour (15.5 tons/year)

Volatile Organic Compounds

Current, permitted emissions = 10.0 lbs/hour and 46.86 tons/year

These emission rates are scaled up based on the ratio of the currently permitted and proposed production levels

Proposed emissions

10.0 lbs/hour x 600/475 (ratio of production levels) = 12.63 lbs/hour (55.32 tons/year)

Carbon Monoxide

Current, permitted emissions = 7.3 lbs/hour and 31.8 tons/year

These emission rates are scaled up based on the ratio of the currently permitted and proposed production levels

Proposed emissions

7.3 lbs/hour x 600/475 (ratio of production levels) = 9.2 lbs/hour (40.4 tons/year)

Nitrogen Oxides

Current, permitted emissions = 10.7 lbs/hour and 47.0 tons/year

These emission rates are scaled up based on the ratio of the currently permitted and proposed production levels

Proposed emissions

10.7 lbs/hour x 600/475 (ratio of production levels) = 13.5 lbs/hour (59.2 tons/year)

Table 3. [1]HAP Emissions by Press

Pollutant	lb/MSF 3/8	MSF/yr	Uncontrolled lb/hr	Uncontrolled Ton/yr	[2]Controlled lb/hr	[2]Controlled Ton/yr
acetaldehyde	0.0260	600,000	1.78	7.80	0.18	0.78
Formaldehyde	0.0730	600,000	5.00	21.90	1.0 [3]	4.38 [3]
Phenol	0.0730	600,000	5.00	21.90	0.50	2.19
THC as carbon	0.3199	600,000	21.91	95.98	2.19	9.60
methanol	0.4780	600,000	32.74	143.40	3.27	14.34
acrolein	Not Detected		Not Detected		Not Detected	
benzene	Not Detected		Not Detected		Not Detected	
cumene	Not Detected		Not Detected		Not Detected	
Methyl ethyl ketone	Not Detected		Not Detected		Not Detected	
methyl isobutyl ketone	Not Detected		Not Detected		Not Detected	
propionaldehyde	Not Detected		Not Detected		Not Detected	
styrene	Not Detected		Not Detected		Not Detected	
toluene	Not Detected		Not Detected		Not Detected	
m,p-xylene	Not Detected		Not Detected		Not Detected	
bromomethane	Not Detected		Not Detected		Not Detected	
chloroethane	Not Detected		Not Detected		Not Detected	
chloroethene	Not Detected		Not Detected		Not Detected	
1,2-dichloroethane	Not Detected		Not Detected		Not Detected	
methylene chloride	Not Detected		Not Detected		Not Detected	
1,2,4-trichlorobenzene	Not Detected		Not Detected		Not Detected	
o-xylene	Not Detected		Not Detected		Not Detected	

1 - Based on AP-42, Section 10.5, Plywood Manufacturing, January 2002, Excel data file. If AP-42 provided an average value and a standard deviation, then the average plus twice the standard deviation was used. If AP-42 only provided an average value and a maximum value, then the maximum value was used. If AP-42 did not provide a maximum value or standard deviation, then the highest appropriate actual NCASI test data point was selected.
2 – RTO controlled to 90%
3 – Emission rate reflects source testing conducted at GP Fordyce OSB Plant

Material Handling Sources (General)

In the original application submittal, the estimated particulate matter emissions from the material handling sources were based on the higher of two approaches – throughput/control efficiencies and air flow/grain loadings; in the original application, Emission Points 04 (Sawtrim/Finishing Line Pneumatics), 05 (Mat Reject/Flying Saw Pneumatics), 06 (Specialty Saw/Sander Pneumatics), and 08 (Forming Bins Pneumatics) had higher emission rates based on the air flow/grain loading approach – as discussed further in the main text, the air flows are changing for Emission Points 05 and 08 – as such, the estimated emissions for those two sources increase accordingly; since neither the grain loadings or the air flows are changing for Emission Points 04 and 06, the emission estimates for these sources will not change from the prior submittal; for Emission Points 03 (Screen Fines w/Sawtrim Transfer Pneumatics), 07 (Fuel System Pneumatics), and 09 (Hammermill System Pneumatics), the emission rates were higher for the throughput/control efficiency approach – since the throughput is increasing from 475 to 600 MMSF/year, the estimated emission rates for these sources will increase accordingly; the emission rates for all of the Material Handling Sources (Emission Points 03 through 09) are presented in the following sections:

Source No. 03 (Screen Fines with Sawtrim Transfer Pneumatics)

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 2.1 lbs/hour and 9.2 tons/year

Proposed emissions

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 26,245 lbs/hour

Proposed throughput to receiver = 26,245 x 600/475 = 33,152 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

33,152 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 2.6 lbs/hour (11.4 tons/year)

Calculation based on air flow/grain loading

13,940 dscfm x 0.01 grain/dscf (BACT Limt) x 60 min/hour x lb/7000 grains = 1.19 lbs/hour (5.2 tons/year)

Highest emission rate, proposed for new permit

2.65 lbs/hour (11.6 tons/year)

Source No. 04 (Sawtrim/Finishing Line Pneumatics)

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 1.3 lbs/hour and 5.7 tons/year

<u>Proposed emissions</u>

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 4,911 lbs/hour

Proposed throughput to receiver = 4,911 x 600/475 = 6,203 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

6,203 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 0.50 lb/hour (2.2 tons/year)

Calculation based on air flow/grain loading

31,360 dscfm x 0.005 grain/dscf (BACT Limit) x 60 min/hour x lb/7000 grains = 1.34 lbs/hour (5.88 tons/year)

Highest emission rate, proposed for new permit

1.34 lbs/hour (5.88 tons/year)

Source No. 05 (Mat Reject/Flying Saw Pneumatics)

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 2 lbs/hour and 8.76 tons/year

Proposed emissions

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 1,183.8 lbs/hour

Proposed throughput to receiver = 1,183.8 x 600/475 = 1,495 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

1,495 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 0.12 lb/hour (0.52 ton/year)

Calculation based on air flow/grain loading

53,320 dscfm x 0.005 grain/dscf (BACT Limit) x 60 min/hour x lb/7000 grains = 2.28 lbs/hour (10 tons/year)

Highest emission rate, proposed for new permit

2.28 lbs/hour (10 tons/year)

Source No. 06 (Specialty Saw/Sander Pneumatics)

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 2.2 lbs/hour and 9.5 tons/year

Proposed emissions

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 4,214 lbs/hour

Proposed throughput to receiver = 4,214 x 600/475 = 5,323 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

5,323 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 0.43 lb/hour (1.9 tons/year)

Calculation based on air flow/grain loading

25,860 dscfm x 0.01 grain/dscf (BACT Limit) x 60 min/hour x lb/7000 grains = 2.21 lbs/hour (9.7 tons/year)

Highest emission rate, proposed for new permit

2.21 lbs/hour (9.7 tons/year)

Source No. 07 (Fuel System Pneumatics)

Particulate Matter (PM and PM$_{10}$)

Current, permitted emissions = 0.3 lb/hour and 1.31 tons/year

Proposed emissions

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 4,214 lbs/hour

Proposed throughput to receiver = 4,214 x 600/475 = 5,323 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

5,323 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 0.43 lb/hour (1.88 tons/year)

Calculation based on air flow/grain loading (no change)

480 dscfm x 0.01 grain/dscf x 60 min/hour x lb/7000 grains = 0.04 lb/hour (0.18 ton/year)

Highest emission rate, proposed for new permit

0.43 lb/hour (1.88 tons/year)

Source No. 08 (Forming Bins Pneumatics)

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 1.9 lbs/hour and 8.32 tons/year

<u>Proposed emissions</u>

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 879 lbs/hour

Proposed throughput to receiver = 879 x 600/475 = 1,110 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

1,110 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 0.089 lb/hour (0.39 ton/year)

Calculation based on air flow/grain loading

22,940 dscfm x 0.01 grain/dscf x 60 min/hour x lb/7000 grains = 1.96 lbs/hour (8.61 tons/year)

Highest emission rate, proposed for new permit

1.96 lbs/hour (8.61 tons/year)

Source No. 09 (Hammermill System Pneumatics)

Particulate Matter (PM and PM_{10})

Current, permitted emissions = 2.1 lbs/hour and 9.2 tons/year

Proposed emissions

Calculation based on throughput/control efficiency

Current, estimated throughput to receiver = 26,245 lbs/hour

Proposed throughput to receiver = 26,245 x 600/475 = 33,152 lbs/hour

Receiver efficiency = 80%, Bagfilter efficiency = 99.96%

33,152 lbs/hour x (1 – 0.8) x (1 – 0.9996) = 2.65 lbs/hour (11.6 tons/year)

Calculation based on air flow/grain loading (no change)

15,000 dscfm x 0.01 grain/dscf x 60 min/hour x lb/7000 grains = 1.28 lbs/hour (5.63 tons/year)

Highest emission rate, proposed for new permit

2.65 lbs/hour (11.6 tons/year)

Fugitive Sources

Fugitive Sources – PM

The fugitive emission sources of particulate matter at the Fordyce OSB plant are:

- paved roads
- bark handling and the bark storage pile.
- debarker and hog
- edge sealing and marking of boards

The following calculations present the emission rates for each of these sources.

Fugitive Source 1 – Paved Roads

No unpaved roads are utilized at this facility to move raw materials or finished products. Therefore, the only calculations shown are those from paved roads. In addition, the facility will sweep the grounds regularly to reduce the occurrence of fugitive emissions. A control factor of 50% was added to the calculations below to account for the sweeping reduction.

Calculation Equation: [1] $E = k\ (sL/2)^{0.65}\ (W/3)^{1.5}\ (1 - 80\%\ \text{control})^*$

*A 80% control was added to the emission calculations for sweeping

E =particle emission factor (lb/VMT)
k =base emission factor for particle size range (lb/VMT)
sL =road surface silt loading (g/m^2)
W =average weight (tons) of the vehicles traveling the road

k [2]= 0.016 lb/VMT for PM10 0.082 lb/VMT for TSP
sL [3]= 1.5 g/m^2

Paved Plant Road Vehicle Traffic Summary

Activity		Annual Production [4] (tons/yr)	Distance (miles)	Avg. Truck Capacity (tons)	Vehicle Miles Traveled [5] (VMT)	Average Weight (WT) (tons)	E [1] (lb/VMT)	Lb/ Hr Emissions	Annual Emissions (tons/yr)
Log/Bark/Fine Trucks	(Loaded)	1,474,600	0.62	20.0	45,713	40.0	0.13	0.6743	3.0
OSB Trucks	(Loaded)	393,760	0.19	20.0	3,729	40.0	0.13	0.0550	0.2
OSB Trucks	(Unloaded)	393,760	0.19	20.0	3,729	20.0	0.05	0.0194	0.1
Log/Bark/Fine Trucks	(Unloaded)	1,474,600	0.19	20.0	14,009	20.0	0.05	0.0731	0.3
Service Trucks	(Loaded)	4,380	0.56	2.0	1,226	2.0	0.00	0.0002	0.001
Log/Bark/Fine Trucks	(Unloaded)	1,474,600	0.56	20.0	41,289	20.0	0.05	0.2153	0.9
Service Trucks	(Unloaded)	4,380	0.56	2.0	1,226	2.0	0.00	0.0002	0.001

Paved Plant Road Fugitives PM10 **1.04** **4.54**

1 Based on AP-42, Section 13.2.1, Paved Roads, p. 13.2.1-4, December 2003. Equation (1) for estimating dust emissions from vehicle traffic on paved roads.
2 Based on AP-42, Section 13.2.1, Paved Roads, Table 13.2-1.1, Particle Size Multipliers For Paved Road Equation (PM10 value used), p. 13.2.1-3, October 1997.
3 Based on AP-42, Section 13.2.1, Paved Roads, Table 13.2.1-3, Typical Silt Content and Loading Values For Paved Roads at Industrial Facilities (Mean Silt Loading for Iron and Steel Production used due to large number of samples us1474600ed to develop factors), p. 13.2.1-6, October 1997.
4 Based on tons of logs processed.
5 Determined by multiplying Total Annual Production by Distance Traveled and dividing by Truck Capacity.

No unpaved roads are utilized at this facility.

Fugitive Source 3 - Batch drop of Bark onto Bark Pile, Wind Erosion and Transfer Points

Emission Factor – Batch drop

AP-42 Section 13.2.4 calculates an emission factor as follows:
Factor (lbs. PM/ton bark dropped) = $((k*0.0032*(U/5)^{1.3}/(M/2)^{1.4}$
AP-42, 13.2.4 equation 1 assumptions are:
For PM, the value of K =1.
For PM10, the value of K = 0.74 see AP-42, 13.2.4
U, Wind Speed = 7.1 mile per hour
M, Moisture content of bark = 50%
The emission factors are calculated as follows:
PM10: $0.74 \times 0.0032 \times (7.1/5)^{1.3} / (50/2)^{1.4}$
= 0.000041 lbs. PM10/ton bark
PM: $1 \times 0.0032 \times (7.1/5)^{1.3} / (50/2)^{1.4}$
= 0.000056 lbs. PM/ton bark

Bark processed

Based on process knowledge, 10% of the log is bark.

Based on 170 tons/hr of logs processed and 10% of the log being bark, the throughput is:
170 tons logs/hr x 8760 hr/yr x 0.1 bark/log = 148,920 tons/year

Emission Rate

The emission rates are calculated to be:

PM10: 148,920 tons/year x 0.000041 lbs. PM/ton bark = 6.1 lbs/year
PM: 148,920 tons/year x 0.000056 lbs. PM/ton bark = 8.3 lbs/year

Emission Factor Wind Erosion Calculation AP-42 Section 13.2.5

The emissions factor is based on the exposed surface area and the following equation:
Gram PM/square meter surface area =K x 58 (u*-ut*)^2 + 25 (u* - ut*)
ut* = threshold friction velocity. By using ½ of the loose coal factor, ut*=0.56 meter/s
u*= friction velocity = 0.53 x "fastest velocity". Assuming fastest velocity = 30 miles/hour, u*= 7.1 m/sec
For PM10, the value of k= 0.5, for PM, the value of k=1. See AP-42, 13.2.5.3

For PM10, the emission factor is calculated as 4.19 gram/m2 per wind event
For PM, the emission factor is calculated as 8.38 gram/ m2 per wind event

Surface Area

The Surface Area is calculated with the following factors:

Shape is conical
Height is 15 feet.
Radius is 50 feet.
Calculated Exposed Area = 8,200 square feet (762 square meters)

$$A = \pi r\,(r2 + h2)^{1/2}$$

$$A = 3.14*50(2500 + 225)^{1/2}$$

$$A = 31.4 * (50) * (52.2)$$

$$A = 8{,}200\ ft^2 \text{ or } 762\ m^2$$

Wind Events.

Assume 2 wind events per day, and 100 events per year above the threshold of 30 miles/hour

Emission Rates:

The pile will be partially enclosed by retaining walls. Assuming that these walls block the wind from some surfaces of the pile, the calculation below assumes that only 25% of the total surface area is exposed to a wind event, the daily emission rates are:

PM10: 0.25 x 762 square meters x 4.19 gram/square meters x 2 events/day = 1,600 grams/day x lb/454 grams = 3.5 lbs./day.
PM: 0.25 x 762 square meters x 8.38 gram/square meters x 2 events/day = 3,192.8 grams/day x lb/454 grams = 7.0 lbs./day.

The annual emission rates are calculated to be:

PM10: 0.25 x 762 square meters x 4.19 gram/square meters x 100 events/year = 79,820 grams/year x lb/454 grams = 175.8 lbs./year (0.087 tons/year)
PM: 0.25 x 762 square meters x 8.38 gram/square meters x 100 events/year = 159,639 grams/year x lb/454 grams = 351.6 lbs./year (0.18 tons/year)

Emissions Associated with Transfer Points

G-P will have the option of either shipping bark material offsite or stockpiling. To move the bark from debarkers to either pile will require the use of conveyors. G-P estimates the number of transfer points to along the transfer route to be seven. Therefore, the emission rate is calculated to be:

TSP PM: 7 x 148,920 tons/year x 0.000056 TSP PM/ton bark x 0.1 (assume 90% control due to enclosed chutes and transfer points) = **5.8** lbs/year (0.0029 tpy)

PM10: 7 x 148,920 tons/year x 0.000041 lb PM10/ton bark x 0.1 (assume 90% control due to enclosed chutes and transfer points) = **4.3** lbs/year (0.00215 tpy)

Fugitive Source 4 – Debarker and Bark Hog

Debarker – With partial enclosure, 50% control
Emission Factor – Draft AP-42,10.1 (fourth edition) 0.024 lb/ton PM, 0.011 lb/ton PM10

Based on process knowledge, the facility can process 170 tons of logs per hour.

PM 170 tons logs/hour x 0.024 lb/ton (AP-42) x (1- 0.5) = 2.04 lbs/hr (9 tpy)
PM10 170 tons logs/hour x 0.011 lb/ton (SCC) x (1- 0.5) = 0.94 lbs/hr (4.1 tpy)

Bark Hog – With full enclosure, 90% control
Assume bark = 10% by weight of total logs = 17 tons/hr; use debarking factors as representative

PM 17 tons bark/hour x 0.024 lb/ton x (1 – 0.9) = 0.0408 lb/hr (0.21 tpy)
PM10 17 tons bark/hour x 0.011 lb/ton x (1 – 0.9) = 0.018 lb/hr (0.078 tpy)

Fugitive Source 5 – Edge Sealing /Marking of Boards in and outside Spray Booth

Outside Spray Booth (in manufacturing building)

Assume 9,000-gallons/year coating for stencil and marking at 8.5 lbs/gallon density and 20% solids content; assume a sprayer transfer efficiency of 60%.

PM 9,000 gallons/year x 8.5 lbs/gallon x 0.2 lbs solids/lb coating x (1-0.6) = 6,120 lbs/year (0.69 lb/hr and 3 tpy)

PM10 Assume PM10 = 100% of PM = 6,120 lbs/year (0.69 lb/hr and 3 tpy)

Inside Spray Booth (in manufacturing building)

Paint spraying is automated, air atomized
Amount of paint sprayed transferred to media = 70%, 30% to control device/exhaust
Filter is 98% efficient for particulates
PM10 = 100% of Particulates

Annual Emissions
600,000,000 square feet of board edge sealed per year

Edge seal
Paint Usage = 0.20 gal/1000 square feet of board
Solids content of paint = 54%

0.20 gal/1000 square feet of board x 600,000,000 square feet/year x 54% x 30%(overspray) x (1-98% control) = 388.5 lbs PM/year = (0.19 tpy)

PM10 = 100% of PM = 389 lbs PM/year = (0.19 tpy)

Hourly Emissions
Maximum Hourly rate = 78,000 square feet of board

Edge seal
0.20 gal/1000 square feet of board x 78,000 square feet/hr x 54% x 30%(overspray) x (1-98% control) = 0.051 lbs PM/hr

PM10 = 100% of PM = 0.051 lbs PM10 /hr

Combined emissions with 90% control due to the stations being fully enclosed.

PM Emissions
(0.69 lb/hr + 0.051 lbs/hr) x (1 – 90% control) = 0.0741 lbs/hr (0.32 ton/yr)

PM10 Emissions
(0.69 lb/hr + 0.051 lb/hr) x (1 – 90% control) = 0.0741 lbs/hr (0.32 ton/yr)

Fugitive Sources – VOC

The fugitive emission sources of VOCs at the Fordyce OSB plant are:

- Blend House
- Finished Product Storage
- Edge Sealing of Boards
- Resin Storage Tanks

Blend House (VOC/HCOH emissions; Resin and wax are blended with dry wood in the blend house)

OSHA testing has indicated 0.47 ppm VOCs and formaldehyde; assume a fan flow of 36,267 scfm

VOC 0.47 ft^3/MMft^3 air x 60 mins/hr x 36,267 ft^3 air/min x 30.03 lb/lb-mol x lb-mol/359 ft^3 = 0.086 lb/hr (0.38 tpy)

HCOH Assume formaldehyde = VOCs

Finished Product Storage (VOC/HCOH emissions)

OSHA testing has indicated 0.21 ppm VOCs and formaldehyde; assume a fan low of 40,000 acfm

VOC 0.21 ft^3/MMft^3 air x 60 min/hr x 36,267 ft^3 air/min x 30.03 lb/lb-mol x lb-mol/359 ft^3 = 0.038 lb/hr (0.16 tpy)

HCOC Assume formaldehyde = VOCs

Resin Storage Tanks (VOC/HCOH emissions)

Breathing and working losses are calculated using the EPA TANKS program. Based on an annual throughput of 1.52 million gallons of resin, the calculated VOC/HCOH emissions are 664.18 lbs/yr (0.075 lb/hr and 0.33 tpy); output from the TANKS program is attached

Assume HCOH = 50% of VOCs = 332.1 lbs/yr (0.037 lb/hr ad 0.16 tpy)

Summary of Fugitive Source Emissions:

Summary of Fugitive Source Emissions, G-P Hosford

Pollutant	Source	Emission Rate Lb/hr	Emission Rate Tpy
TSP	Paved Roads	5.1	23.1
	Bark Handling and Storage Pile	0.041	0.183
	Debarker and Hog	2.08	9.21
	Total	7.2	32.5
PM10	Paved Roads	1	4.5
	Bark Handling and Storage Pile	0.0203	0.0891
	Debarker and Hog	0.958	4.18
	Total	1.95	8.57
VOC	Blend House	0.086	0.37668
	Finished Product Storage	0.038	0.16644
	Resin Storage Tanks	0.037	0.16206
	Total	0.161	0.70518

Appendix

-TANKS Program Output
-Vendor Guarantees
-Material Safety Data Sheet

TANKS Program Output

Vendor Guarantees

Material Safety Data Sheets

REPORT OF AIR EMISSIONS AND INLET LOADING TESTS FOR GEORGIA PACIFIC CORPORATION FORDYCE OSB PLANT NOS. 1 AND 2 RTOs

Fordyce, Arkansas
March 25 and 26, 2004

Georgia Pacific Corporation
Post Office Box 1095
Fordyce, Arkansas 71742

contact John Covert
ph: 870/352-7252

Performed By:
Environmental Monitoring Laboratories
Ridgeland, Mississippi

<601/856-3092>

ENVIRONMENTAL MONITORING LABORATORIES, INC.

P.O. Box 655 ⊃ 624 Ridgewood Road
Ridgeland, Mississippi 39158

phone: 601/856-3092
fax : 601/853-2151

April 26, 2004

Subject: Georgia Pacific Corporation -- Fordyce, Arkansas OSB Plant
Permit No. 1803-AOP-R1

On March 25 and 26, 2004, Environmental Monitoring Laboratories performed air emissions testing at the request Georgia Pacific Corporation. Testing was performed to determine Particulate, visible, VOC, CO, NOx, and formaldehyde emissions from and VOC inlet loading to two RTOs controlling emissions from 5 rotary dryers. The rotary dryers are used to remove moisture from wood flakes as a step in the process of manufacturing oriented strand board (OSB). This testing was done in accordance with requirements of the Arkansas Department of Environmental Quality.

Mr. John Covert of Georgia Pacific coordinated the testing project. Danny Russell of Environmental Monitoring Laboratories was responsible for sample collection and for report preparation. Gas bag samples were sent to Bonner Analytical in Hattiesburg, Mississippi for methane analysis. Otherwise, sample custody was limited to Mr. Russell beyond recovery.

Test results are presented in the following executive summary table. Following the executive summary is a report of the test.

EXECUTIVE SUMMARY OF RESULTS

APRIL 25 AND 26, 2004

No. 1 RTO	**Inlet**		**Outlet**		Removal Efficiency
	Conc.	#/hr.	Conc.	#/hr.	
Particulate	------	------	0.0275 gr/dscf	22.80	------
VOC (as C)	1264 ppm	171.73	6 ppm	1.10	99.37%
CO	------	------	151 ppm	63.51	------
NOx	------	------	33 ppm	23.00	------
Formaldehyde	------	------	2.8 ppm	1.25	------
Opacity	------	------	12.08% (highest six minute avg)		------

No. 2 RTO	**Inlet**		**Outlet**		Removal Efficiency
	Conc.	#/hr.	Conc.	#/hr.	
Particulate	------	------	0.0153 gr/dscf	10.89	------
VOC (as C)	1272 ppm	172.94	37 ppm	5.77	97.26
CO	------	------	53 ppm	19.24	------
NOx	------	------	37 ppm	21.91	------
Formaldehyde	------	------	3.10 ppm	1.20	------
Opacity	------	------	9.17 (highest six minute avg)		------

Total	**Inlet**	**Outlet**	Removal Efficiency
	#/hr.	#/hr.	
Particulate	------	35.88	------
VOC (as C)	344.67	6.87	98.3%
CO	------	82.75	------
NOx	------	44.91	------
Formaldehyde	------	2.45	------

Air Emissions and Inlet Loading Tests Nos. 1 and 2 RTOs
Production Information

Rate of Production During Tests
(90% Level)

	Run 1	Run 2	Run 3	Average
Production (od pounds / Hr)[1]	131,092	131,092	124,083	128,756
Production (MSF-$^{3}/_{8}$ Basis / Hr)[2]	78:5	78.5	74.3	77.1

1 – Indirect measurement based on drop samples
2 – Conversion of od pounds / hr to facility's unit of measure

Rate of Production
100 % Level (Calculated)

	Run 1	Run 2	Run 3	Average
Production (od pounds / Hr)	141,201	141,201	136,491	139,631
Production (MSF-$^{3}/_{8}$ Basis / Hr)	87.2	87.2	82.6	85.7

PEI
Pro-Environmental, Inc.

PRO-ENVIRONMENTAL, Inc

Thermal and Catalytic Oxidizers for VOC/HAPS Control

10134 6th Street, Suite K
Rancho Cucamonga, CA 91730

Main Line: 909/989-3010
Fax Line: 909/989-3011

October 20, 2003

Georgia Pacific Corporation
55 Park Place, 15th Floor
P.O. Box 740075 (30374-0075)
Atlanta, GA 30303

(Sent by e-mail: jadees@gapac.com)

RECEIVED
OCT 24 2003
BP Engineering

Attention: Mr. Allen Dees - Project Manager/Project Engineer

Subject: RTO/RCO Equipment
Georgia-Pacific Corporation - OSB Plant, Hosford, FL
Georgia-Pacific Corporation Purchase Order No. 02038, Dated 10/7/03
PEI Job No. 1008

Gentlemen:

Thank you for your purchase order. PEI is privileged to be able to work with Georgia-Pacific on the new OSB plant at Hosford, Florida.

Per your request, attached is our confirming proposal, which incorporates the agreements made at the recent meetings at Georgia-Pacific's offices. We trust that the following accurately depicts the items discussed. Also attached is the Master Purchase Agreement, dated October 8, 2003, which has been signed by both parties.

We assure you of our attention to the project to insure its timely and mutually satisfactory conclusion.

Sincerely,

John G. Kirkland
Director of Applications

JGK/bg

cc: Mr. Troy Bennett, Georgia Pacific, Atlanta, GA (e-mail: tdbennet@gapac.com)
Mr. Harold Wilson, Georgia Pacific, Atlanta, GA (e-mail: hlwilson@gapac.com)
Mr. David Chiles, PEI, Rancho Cucamonga, CA

GEORGIA PACIFIC CORPORATION

55 Park Place, 15th Floor
Atlanta, GA 30303

Mr. Allen Dees – Project Manager/Project Engineer

RTO / RCO EQUIPMENT
FOR

GEORGIA-PACIFIC CORPORATION

OSB PLANT – HOSFORD, FL U.S.A.

October 20, 2003
Georgia-Pacific Purchase Order No. 02038
PEI Job No. 1008

Submitted by:

John G. Kirkland
Director of Applications

PRO-ENVIRONMENTAL, INC.
10134 6th Street, Suite K
Rancho Cucamonga, CA 91730
Telephone: (909) 989-3010
Facsimile: (909) 989-3011

PEI
Pro-Environmental, Inc.

INDEX

SECTION 1: INTRODUCTION

This proposal covers the supply of abatement systems to handle OSB dryer emissions and OSB press vent emissions. Included is all equipment necessary for operation of the RTO systems. The equipment will be erected and installed at GEORGIA-PACIFIC's OSB plant located in Hosford, Florida.

GENERAL SCOPE OF WORK

The abatement systems include the following:

- Dryer emissions: Two 9 canister RTOs
- Press Vent Emissions: One 5 canister RCO
- I.D. fan system (each RTO) with VSDs

The systems will be capable of operating automatically over the range of process conditions described herein.

The regenerative heat exchanger system for each RTO uses multiple heat recovery canisters packed with ceramic media, which is described below.

The proposed systems include features designed to ensure attaining high destruction efficiencies and minimum visible system discharge. These include:

- Optimum temperature operation
- Low leakage valves
- Additional purge canister for collection of contaminated process exhausts in the heat recovery media. This air is returned to the RTO inlet for processing instead of being evacuated to atmosphere during cycle changes. The additional canister also eliminates "puffing" from the RTO stack during canister cycle changes.
- Long life high cycle duty hydraulic actuators are used for the flow control valves, to provide maximum flexibility in RTO operation. Typical RTO uptime is in the 99+% area.

Estimated oxidizer operating data for a range of process conditions are given in Exhibit 1.

SECTION 2: BASIS OF DESIGN

SYSTEM DESIGN

The RTO units are based on a modular design concept and standardized components.

Abatement of five OSB dryers will be accomplished with the use of two identical RTOs, each RTO sharing the process load 50/50. Each RTO will be equipped with separate isolation valves (supplied by GEORGIA-PACIFIC) and fresh air makeup dampers for independent operation.

The OSB press vent emissions will be abated by a single 5 canister RCO.

Process data as provided by GEORGIA-PACIFIC, and as agreed during subsequent discussions are summarized as follows:

ROTARY DRYER RTO SPECIFICATIONS

The following data was provided by GEORGIA-PACIFIC and as agreed between Georgia-Pacific and PEI:

A. Two RTOs, each designed to process the exhaust gases from three (3) southern pine OSB dryers per the following operating conditions:

1. Gas capacity: 133,900 SCFM (192,000 ACFM @ 300°F) at each RTO inlet.
2. Gas Humidity: 24.4% $H_2O(v)$ – 0.20 lb. H_20/lb. dry air
3. Gas Pressure: (-) 2.0" w.c. at RTO inlet
4. The RTO should have the capacity to accommodate seasonal fluctuations in temperature and volume.

B. Expected exhaust emissions for each dryer.

1. PM (total particulate matter): 100.0 lb/hr
2. VOCs: 252.53 lb/hr
3. CO: 26.87 lb/hr
4. NO_X : 11.94 lb/hr
5. HCHO: 3.74 lb/hr
6. 60,000 ACFM @ 270°F
7. Heat source will be wood fired suspension burners
8. Capacity of each dryer: 25,200 lb/hr OD wood
9. Burner heat: 48.02 MMBTU/hr
10. Inlet temperature to dryer: 1336°F
11. Salts will also be found in the air stream.

C. Guaranteed RTO performance for both RTO's operating on 5 southern pine OSB dryers operating at capacity: During periods of operation with less than 5 dryers, allowable emissions shall be the limits below multiplied by the number of operating dryers divided by 5. In no case will the emissions from any one RTO exceed sixty percent (60%) of the limits below.

The following are maximum emission rates in lb/hr as outlined in the plant permit:

	Pollutant	Emission Limit	Averaging Time	Basis
1.	PM/PM10	33.8 lb/hr	3 hours	BACT
2.	Nox	60.0 lb/hr	3 hours	BACT
3.	CO	33.6 lb/hr	3 hours	BACT
4.	VOC	63.1 lb/hr	3 hours	BACT
5.	VE(Opacity)	5% opacity	6 minutes	BACT
6.	SO2	2.30 lb/hr		
7.	HCOH	1.85 lb/hr		

8. RTO inlet static pressure: (-) 2" w.c. ± 0.25"w.c.
9. Time between wash outs to be determined
10. Time between burn outs to be determined
11. Media bed life to be not less than two years. (Please see Ceramic Heat Recovery Beds for the Dryers RTOs in Section 3 below).
12. Opacity limit of 5% - with no puffing, including RTO normal operation and bake-out cycles
13. Thermal efficiency - the thermal efficiency when operating on line at or below the design airflow shall be no less than 93.8% when operating on burners and 95.0% when operating on fuel injection.

    Thermal efficiency shall be calculated using the following formula:

$$TE = \frac{\text{Combustion chamber temperature Outlet temperature}}{\text{Combustion chamber temperature Inlet temperature}}$$

Notes:
A. All of the temperatures are to be time average temperatures over at least one complete cycling of all RTO valves.
B. The outlet temperature is to be measured upstream of the RTO fan.

D. The RTO's to be designed for out door operation in Hosford, FL.

PRESS VENT RCO SPECIFICATIONS

Note: GEORGIA-PACIFIC will install the 5-canister RCO originally installed at the Canfibre, Riverside, California MDF facility and now located at Sierra Pine, Springfield, Oregon.

The following data was provided by GEORGIA-PACIFIC and as agreed between Georgia-Pacific and PEI:

A. One RCO designed to process the vent gas from one southern pine OSB press per the following conditions:

1. Gas capacity: 112,200 SCFM (130,000 ACFM @ 150°F) at the RTO inlet
2. Gas Humidity: 8.8% $H_2O(v)$ – 0.06 lbs H_2O/lb dry air
3. Gas Pressure: (-) 4" w.c. at RTO inlet
4. The RCO should have the capacity to accommodate seasonal fluctuations in temperature and volume.

B. Guaranteed RCO performance: (Information based on plant permit limits. RCO must achieve outlined % reduction).

	Pollutant	Emission Limit	Averaging Time	Basis
1.	PM/PM10	2.8 lb/hr	3 hours	BACT
2.	Nox	10.7 lb/hr	3 hours	BACT
3.	CO	7.3 lb/hr	3 hours	BACT
4.	VOC	10.0 lb/hr	3 hours	BACT
5.	VE(Opacity)	5% opacity	6 minutes	BACT
6.	SO2	0 lb/hr		
7.	HCOH	0.24 lb/hr		

8. RCO inlet static pressure: (-) 4" w.c. ± 0.25" w.c.
9. Time between bake outs to be not less than one year
10. Opacity limit of 5% - with no puffing, including normal operation and bake-out cycles.
11. Thermal efficiency - the thermal efficiency when operating on line at or below the design airflow shall be no less than 93.8% when operating on burners and 95.0% when operating on fuel injection.
12. Efficiency (thermal efficiency) for catalytic oxidizer to be 95% efficient. (Optional pricing)
13. Thermal efficiency shall be calculated using the following formula:

$$TE = \frac{\text{Combustion chamber temperature - Outlet temperature}}{\text{Combustion chamber temperature - Inlet temperature}}$$

Notes:
1. All of the temperatures are to be time average temperatures over at least one complete cycling of all RCO valves.
2. The outlet temperature is to be measured upstream of the RCO fan.

C. The RCO to be designed for out door operation in Hosford, FL.

D. The type if resin will be liquid phenol formaldehyde (phenolic resin). The type of wax will be emulsified (emulsion wax).

E. The VOC emission rate into the RCO will be 50 lb/hr as agreed between Georgia-Pacific and PEI on September 3, 2003.

RTO/RCO CONFIGURATION

Based on the process emissions data, the following RTO/RCO configurations are recommended:

EQUIPMENT ABATED	DESIGN	RTO/RCO QUANTITY
5 Dryers	9 Canister RTO	2
OSB Press	5 Canister RCO	1

PRIMARY HEAT EXCHANGER SYSTEM

The process conditions given above were used for determining the primary heat exchanger thermal efficiency.

On this basis, a thermal efficiency of 95% will provide minimum fuel consumption at the process conditions given above.

VOC DESTRUCTION EFFICIENCY

Two factors are critical for maximum thermal oxidizer destruction efficiency:

- Oxidation Conditions (temperature, time and mixing)
- Valve System Design

Each is described as follows:

OXIDATION CONDITIONS

Satisfactory (i.e., essentially complete) oxidation of the VOCs requires adequate temperature, retention time and gas phase mixing.

1. Temperature

   The discharge temperature of the preheated VOC-containing gases exiting the heat exchanger ceramic bed will be in the range of 1430°F with the oxidizer retention chamber controlling at 1500°F.

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These preheat temperatures are generally higher than the auto-ignition temperatures of typical VOCs. Thus, some VOC oxidation (a time/temperature relationship) will begin to occur in the ceramic packed beds.

Multiple low NO_x burners or the fuel injection combustion system are used to maintain a preset thermal oxidation temperature. Total burner input under normal operating conditions, with the oxidizer controlling at 1500°F, is given in Exhibit 1 for a range of process conditions.

The RTO system is capable of operation at up to 1700°F for the dryer RTOs only (1400°F-1700°F operating capability range).

2. Time

   The retention chamber is sized to provide for a minimum of 1.5-seconds retention time (calculated as the retention chamber volume with the oxidizer operating at 1500°F and the normal SCFM of process exhausts).

3. Gas Phase Mixing

   The heat exchanger vessel and retention chamber designs are such that linear velocities of the oxidizing gases, together with flow patterns, will be sufficient to provide satisfactory gas phase mixing (turbulence).

VALVE SYSTEM DESIGN

Because the regenerative oxidizer requires cycling between the heat exchanger vessels, a series of valves in the inlet and outlet ducting of the system must be employed to handle the flow changes and sequential operation of the system.

The valves are specially selected for very low or no leakage since any leakage would result in the contamination of the clean oxidizer gases being discharged from a heat exchanger vessel with VOC-containing emissions from the process.

EXTERNAL INSULATION (BY OTHERS)

External insulation is to be provided to the following sections to maintain relatively high metal temperatures, thus minimizing potential for condensation:

- RTO inlet, outlet, and burnout manifold ductwork
- RTO induced draft fan/transitions

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- Stacks (to height of fan transition, and test port area)

OPERATING CONSIDERATIONS

Comments are as follows on operating considerations:

- Safeties/interlocks will be provided in the system control logic to permit safety in cleaning of the process ductwork when the system is offline (e.g., in a burnout mode, or on standby). These would include lockout of the oxidizer isolation valves (which are supplied by GEORGIA-PACIFIC).

SECTION 3: EQUIPMENT SCOPE

NOTE: Please see Page 19 through 21 below for information of the existing 5-canister press RCO.

RTO SYSTEM

Each oxidizer incorporates heat exchanger canisters sized for 95% thermal energy recovery during a normal flow condition. Each refractory-lined heat exchanger canister is filled with ceramic heat recovery media. The media has high temperature capabilities and is designed to provide maximum open area to reduce pressure drop during operation of the system. Connecting the canisters is a refractory lined combustion/retention chamber. Low NO_x burners and the fuel injection system are used to maintain the thermal oxidation temperature of 1500°F (nominal). The combustion chamber is sized to provide a minimum retention time of 1.5-seconds (at normal process SCFM and 1500°F). The oxidizer is capable of continuous operation at up to 1700°F.

The heat exchanger canisters are connected by ductwork and valves that allow air to flow from the process into any canister and to exit from any other canister and exhaust to atmosphere.

An induced-draft fan system with VSD flow control is provided for each oxidizer (VSD's supplied by Georgia Pacific).

In the oxidizer, the air is diverted to the inlet plenums of the inlet heat exchanger canisters by the position of the inlet valve system. This air then passes up through the ceramic beds which have been preheated in an earlier cycle.

The inlet air removes heat from the ceramic beds and is preheated prior to entry into the combustion/retention chamber. Oxidation of the organics is completed in this chamber. By opening the outlet valve system, the air is taken from the retention chamber down through the ceramic beds of the outlet heat exchanger canisters, thereby heating the ceramic packing, and then through the open outlet valves to the outlet manifold system.

The following details are applicable to each RTO unit included in the proposed system:

CERAMIC HEAT RECOVERY BEDS (DRYER RTOs)

The ceramic bed dimensions proposed are:

Length:	19.0 ft.
Width:	11.75 ft.
Height:	8.0 ft.

PEI
Pro-Environmental, Inc.

The following media will be installed:

Entire Bed: Standard 1" saddles in chemical porcelain

Ceramic Media Guarantee

The following warranty is offered for standard 1" chemical porcelain saddle media:

PEI warrants the standard 1" chemical porcelain saddle media to be first quality material and as such will be free from defects associated with that grade/quality. PEI further warrants the media against irreversible fouling or plugging to the point where it cannot handle the "normal condition" of the process exhaust for 2 ½ dryers while maintaining the design inlet static pressure of –2" water column, as noted in Exhibit 1-A of our proposal dated September 11, 2003. Fouling or plugging by particulate that is removable by a periodic burnouts/washouts or the RTO shall not be considered to be irreversible. The warrantee period will be for 12 months from date of equipment startup. This warranty is conditioned on operating the Pro-Line washout system to remove the organic/inorganic particulate from the lower bed sections.

MATERIALS OF CONSTRUCTION

ITEM	DRYER RTOs	EXISTING PRESS RCO
Hoppers	Cor-Ten	Carbon Steel
Media Supports	Cor-Ten	Cor-Ten
Canister Sections	316L Stainless Steel	Carbon Steel
Retention Chamber	316L Stainless Steel	Carbon Steel
Inlet Manifold	Carbon Steel	304L Stainless Steel
Outlet Manifold	Carbon Steel	Carbon Steel
Purge Ductwork	Cor-Ten	Carbon Steel
Inlet/Outlet/Purge Valves:		
- Type:	Butterfly, metal-to-metal seat	Butterfly, metal-to-metal seat
- Body:	Carbon steel	Carbon steel
- Blade:	Carbon steel	Carbon steel
- Shaft:	Stainless steel	Stainless steel

Note: 1. The dryer RTO hoppers, canisters and retention chambers will be supplied in 3/16" thick plate.

HEAT EXCHANGER CANISTERS

Materials of construction as detailed above.

The design and size of the canisters are based on airflow, pressure drop and heat exchanger thermal efficiency. The quantity of heat exchanger packing and packed bed geometry is designed to provide 95% thermal energy recovery during normal flow conditions (equal flow basis).

The canister hoppers (inlet plenums) will be internally insulated. Access doors will be provided for cleanout of any collected particulate and/or condensed material.

The canisters are internally lined with ceramic fiber modules, 3" and 6" thickness (3" and 4" for the press RCO) from the bed support and above. The modules are secured to the canister wall with a stainless steel anchor system located within the module, which is welded to the steel wall. The ceramic fiber modules are made from a high purity alumina silicate rated for 2300°F continuous use. Density as installed is approximately 10 pcf.

Maximum skin temperature (without external insulation) will be 160°F based on 1500°F hot face, 80°F ambient temperature, and 5 mph wind velocity (except for metal penetrations through the insulation).

RETENTION CHAMBER

Materials of construction as detailed above.

The retention chamber, located on top of the heat exchanger canisters, is reinforced to withstand the pressures involved in the system.

Multiple low NO_x burners (maximum 0.10 lbs $NO_x/10^6$ BTU) are mounted in the sides of this chamber. A ladder and platform is provided to service the burners. Access is provided into the chamber by means of mandoors.

The chamber will be internally lined with 6" ceramic fiber modules, welded to the walls and roof. Refractory details are as described above. Maximum skin temperature (without external insulation) will be 160°F based on 1500°F hot face, 80°F ambient and 5 mph wind velocity (except for metal penetrations through the insulation).

Access doors for installing new media will be provided for both dryers RTOs. Flat roof sections (as per the Fordyce, AR dyer RTOs) will be provided.

INLET, OUTLET, AND PURGE MANIFOLD SYSTEMS

Materials of construction as detailed above.

The inlet and purge manifolds will be externally insulated with 2" fiberglass insulation and aluminum jacketed during equipment installation. Drain provisions in the inlet ductwork will be provided.

The outlet manifold will be externally insulated with 3" fiberglass insulation and aluminum jacketed during equipment installation.

The inlet, outlet, and purge manifolds will be flanged and will be of continuously welded construction with expansion joints provided as required. Mandoors will be provided on both the inlet and outlet manifolds to allow for internal inspection and periodic cleaning.

VALVE/ACTUATOR SYSTEMS

Materials of construction and design as detailed above.

Valve/actuator systems will be provided as follows:

1. Makeup Fresh Air System

   A fresh air valve with hydraulic actuator, failsafe OPEN, will be provided for oxidizer start-up and for purge/cooling air in the event of an oxidizer or process upset. (Also see additional detail given below for this system). Mild steel construction.

2. Heat Exchanger Vessel Inlet and Outlet Valve System

   High cycle duty valves of single-blade construction will be provided for on/off sequential control of the airflow into and from the ceramic beds of the heat exchanger vessels. Valves are heavy duty high temperature construction. Hydraulic actuators (high cycle duty with cushioned stops) will be sized to deliver full operator torque at maximum operating temperature.

   Bearings are high-temperature, self-aligning, corrosion-resistant construction. Long life outboard ball bearings will be utilized, with simple stuffing boxes.

The valves will be actuated by a hydraulic actuator system (high cycle duty with cushioned stops). The valve actuation provided will ensure rapid opening and closing cycles.

3. **Bed Purge Air Control Valves**

   Materials of construction and design as detailed above.

   High cycle duty valves will be provided for on/off sequential control of the purge system for the individual heat exchanger vessels.
   Valve and actuator details and performance will be generally as outlined above for the heat exchanger vessel valve system.

Valves are guaranteed for maximum 0.25% leakage at maximum process flowrate, 300°F and maximum static pressure differential.

The RTO burnout feature will provide for cleaning of any organic materials condensed and deposited on the valve surfaces.

Allen-Bradley proximity switches will be provided on all valves (prove ***OPEN*** and ***CLOSED*** positions) to monitor operation of the valve systems. If a positioning failure is sensed, an operator alarm will be activated.

The valve system is a fail-safe valve design (simple and safe) to provide safe and orderly RTO shutdown on a process upset, power outage, or fire condition (valves do not fail "***As IS***", which could represent a potential hazard during a process upset or fire condition).

Mobil Aero MIL-H-5606A aircraft type hydraulic fluid with excellent viscosity temperature relationships will be provided. The hydraulic actuators will be provided with a pressure relief bypass and an accumulator system to insure correct valve positioning in the event of an oxidizer shutdown on an upset condition. The hydraulic pump will be continuously running and equipped by a hydraulic fluid level sensor to provide a low level alarm. A hydraulic power unit (HPU) will be provided for each thermal oxidizer. A Young or equal aftercooler will be provided as part of the hydraulic unit package, together with an integral heater to provide for constant fluid temperature.

COMBUSTION SYSTEM

The combustion system for the RTO consists of two independent systems:

- Low NO_x burners mounted in the retention chamber. This burner system is used for oxidizer startup.

- Fuel injection combustion system which operates when the RTO is at operating temperature, with the regular low NO_x burner system dropped out – dryer RTOs only.

The low NO_x burners will be Eclipse Thermjet burners (dryer RTOs) and Eclipse Winnox ultra low NO_x burners (press RCO) suitable for firing natural gas. The burners will be mounted on the oxidizer unit, with each burner located between two adjacent heat exchanger canisters. Burners will have a turndown of approximately 20 to 1. Total number of burners, (each rated at 3×10^6 BTUH) are:

- Dryer RTOs: 8 Total installed burner capacity: 24 MMBTUH
- Press RCO: Option 1 – 5 Can RCO: 4 Total installed burner capacity: 12 MMBTUH

The fuel injection system reduces both NO_x generation and fuel and electrical power. Operates once RTO is at operating temperature, with main burner system dropped out. Provides for reduction in NO_x contribution by RTO, and up to 20% savings in operating costs (primarily from reduction in fuel usage, some reduction in electrical power usage) compared to conventional burner system.

Expected NO_x levels in the oxidizer discharge gas are maximum 5 ppmv above incoming NO_X with the fuel injection system operational. The presence of N-containing organic compounds in the plant exhausts (if any) will result in additional NO_x formation.

The combustion system will be complete with fuel gas train and pilot gas trains. Fuel trains will be to FM/IRI requirements. Honeywell UV flame safety controls and interruptible gas pilots will be provided.

The fuel gas trains will be pre-piped and field installed, and wired to a terminal box with the whole assembly installed on the oxidizer unit during installation. Other electrical components related to the operation of the burner will be pre-wired as well.

The burners will be supplied with combustion air from a separate combustion air blower system. The discharge air pressure from the blower will be automatically controlled.

The burner system capacity will be sized to enable oxidizer start-up, from a cold start condition, in a period of approximately 4 to 8 hours. Once the RTO is at operating temperature, the burner system and the combustion air fan are dropped out, with the fuel injection combustion system now controlling the RTO operation.

Please note that for catalytic operation of the press RCO, fuel injection is not to be used and the RCO will operate with the burners firing.

The carbon steel combustion air blower will be New York Blower or equal. The motor will be 480V TEFC high efficiency, 1.15 service factor (to be supplied by GEORGIA-PACIFIC). Connected HP and estimated BHP are given in Exhibit 1.

Stairs will be provided on each RTO for access to the burner platform.

CERAMIC BED BURNOUT (Smokeless)

The Hosford, FL oxidizers are restricted to maximum 5% opacity in the oxidizer discharge gases at all times – including burnout emissions –it is thus necessary for the oxidizers to be fitted with a smokeless burnout feature.

The smokeless burnout returns the discharge gases from the bed being burned out back to the oxidizer retention chamber, via the purge fan, for destruction of the organic particulates. Fan construction and purge/burnout return ducting are upgraded to allow the handling of these hot gases.

The necessary flow control (inlet vane damper on the purge fan) and high temperature isolating dampers (located at the burnout return ducting connection on the retention chamber) will be provided.

Also included will be the Cycle-Clean™ burnout feature which enables the oxidizers to be burned out continuously while on-line. This feature has been used successfully on the oxidizers handling the dryer emissions at Georgia-Pacific's Skippers, VA OSB mill.

Flexibility of operation for burnout will be enhanced, because with the Cycle-Clean™ feature, the oxidizers can be burnt out while on-line, or on scheduled plant down days off-line.

OXIDIZER CONTROL PANEL (Dryer RTOs)

PEI will provide the main oxidizer control panel in a NEMA-12 enclosure. Power supply will be 120V.

The panel will be provided with the following:

- Fusible disconnect switch
- On/off panel and control switch (for isolating all control devices)
- High temperature limit
- Flame safety controller
- Control Logix 1756 using RS Logix 500 Programming Software
- The CPU will be Control Logix 1756-L55M13
- Wonderware color graphics operator interface terminal
- Honeywell 3 point circular chart recorder

The programmable Logic Controller (PLC) provides control of the proper sequencing for the oxidizer's start-up and shutdown processes; proper sequencing of the canister inlet and outlet valves during normal operation and off-line burnout, and control of the retention chamber temperature and inlet manifold static pressure.
The operator interface color monitor and keypad provides a real-time assessment of system operation. The operator interface will incorporate a minimum of 6 preprogrammed pages:

1. Oxidizer Start-Up Procedure Page: Checklist procedure for orderly start-up of the oxidizer system.

2. Oxidizer Shutdown Procedure Page: Checklist procedure for orderly shutdown of the oxidizer system.

3. Overview Page: Graphic representation of the complete system with presentation of:

   - Air flow directions
   - Position of valves and dampers
   - System static pressures
   - System temperatures
   - Induced-draft fan speed (variable speed drive) and inlet vane position
   - Burner firing rate
   - Fuel injection system firing rate

4. PID Bar Graph Page: Analog presentation of all process variables with control loop set points and response (where applicable). The set-point, gain, and rate can be changed through the keypad. The operator interface is password protected and set-point limits can be instituted.

5. Alarm Summary Page: Shows the date and time of alarms in order of occurrence. Alarms must be acknowledged by the operator and reset after the problem has been corrected. Alarms can be sent to printer.

6. Temperature and Static Pressure Indication Page: Consists of a data table showing the values of the system temperatures, and static pressures (bar and numeric representations).

Combustion safety controls are hardwired per IRI requirements.

Terminal boards will be supplied in the control panel for interconnection to all elements in the control system. "RTO Ready" contacts for process interlocks will be provided.

PARAMETRIC MONITORING - OXIDIZER ΔP INDICATION (Dryer RTOs)

A Dwyer indicating pressure transmitter, Model 605-30 will be provided for indication of the total oxidizer system pressure drop. The pressure transmitter will be connected between the oxidizer inlet manifold (measuring static pressure into the system) and the inlet to the ID fan.

This signal will be relayed to the oxidizer control panel, and will be available to GEORGIA-PACIFIC for inclusion into their parametric monitoring system as an indication of total flow through the oxidizer.

MOTORs, MCCs AND VSDs

MCC, ID fan VSD's and all motors greater than 1 HP (except HPU motor) are to be provided by GEORGIA-PACIFIC.

OXIDIZER SYSTEM FAN

A heavy duty induced-draft fan system is provided for system operation. The fan will be of split housing design for wheel removal. The fan wheel will be statically and dynamically balanced.

The fan system will be capable of exhausting the process exhaust requirements, as listed in the "Basis of Design" and maintain a positive static pressure at the outlet of the PEI-supplied equipment. The fan will operate with a variable frequency drive controlling static pressure at the system inlet. A +0.5" w.c. static pressure is provided at the system outlet.

The following additional static pressure allowances (over and above system design static pressures) have been allowed for each ID fan for both the dryer RTOs and press TCO®:

ID Fan	Inlet Static Pressure in w.c.	Additional Static* Pressure Allowance in w.c.
Dryer RTOs	-2.0 (negative)	6.0
Press RCO	-4.0 (negative)	-

*Pressure allowance to overcome increased pressure due to particulate deposits in the heat recovery ceramic media.

All VSDs and fan motors to be provided by GEORGIA-PACIFIC.

Heavy duty induced-draft oxidizer fan (Robinson) will be provided. Motor to be 480V TEFC, high efficiency, 1.15 service factor. The fan will be provided with a variable speed drive for control of static pressure at the system inlet. Transitions to the I.D. fan are provided, as well as expansion joints on the inlet and outlet of the fan.

Fans will be equipped with shaft seals, OSHA shaft guards and hinged clean-out doors.

Fans will be Arrangement 3, Class IV construction, 1200 RPM and will be field insulated during installation.

Connected HP and estimated BHP for the oxidizer induced draft fan systems are given in Exhibit 1.

The ID fans for the dryer RTOs will be identical and will be supplied with the same handing. Fan noise ratings, as supplied by the fan manufacturer, will be advised. Any additional noise control equipment, if required, is by others.

Fan construction is carbon steel.

PURGE FAN SYSTEM (Dryer RTOs)

A single fan system (Robinson supply) is used to provide oxidizer purge air requirements. The constant speed fan is equipment with an inlet vortex damper system, field adjusted.

- Approximately 8% of full flow volume for purge air requirements.

The fan will be Garden City (or equal). The motor will be 480V TEFC high efficiency, 1.15 service factor. Connected HP and estimated BHP data are given in Exhibit 1. Motor to be supplied by GEORGIA-PACIFIC.

Fan construction is carbon steel.

MAKEUP FRESH AIR SYSTEM

The purpose of this system is to provide the following:

1. Fresh air for purging and start-up of the oxidizer with the process isolated from the system. (This may be required from an insurance standpoint.)

2. Fresh air for maintaining oxidizer operation in the event of a process upset condition.

3. Fresh air to operate the oxidizer at minimum airflow during idle or standby mode.

4. Fresh air to cool the oxidizer in the event of a scheduled or non-scheduled shutdown.

OXIDIZER STACK

The oxidizer stack will be fabricated from carbon steel. The self-supporting stack is to be insulated during installation up to the top of the ID fan transition from the base and in the region of the test platform for personnel protection. The stack will be provided with four 4" couplings (capped) as test port locations.

A 360° test platform and access ladder are provided.

Outlet stack gas velocity will be in the 3500 ft/min range.

Stack heights/diameters are :

- Dryer RTOs: 130 ft above grade / 102" dia.
- Press RCO: 70 ft. above grade / 80" dia.
  PEI will add a 30 ft. extension to the existing stack if no structural changes to the existing stack are required to accommodate the 30 ft. extension.

EXISTING 5-CANISTER PRESS RCO

The Canfibre, Riverside RTO has the following features compared to a Standard RTO System:

1.0 FEATURES

- METAL SEAT DAMPERS – The advantage of metal seat dampers over tadpole seat dampers are better sealing surface and no maintenance. On tadpole seat dampers, the tadpole needs to be replaced every year due to wear and tear.

- SMOKELESS BURNOUT – The smokeless burnout feature allows to achieve <3% opacity during burnout operation. Standard burnout typically has ~ 10% opacity.

- 99% DESTRUCTION EFFICIENCY (DRE) – The Canfibre RCO is designed for 99% DRE. Standard systems are designed for 95%.

- PURGE CANISTER – Purge canister allows to eliminate puff and opacity during normal operation and to achieve 99% Destruction Efficiency (DRE).

- ULTRA LOW NO_x BURNERS – The Canfiber RCO system is designed for 0.024#/MMBtu of NO_x formation. Standard RTO system is designed for 0.10-0.12#/MMBtu of NO_x formation.

- CATALYTIC OPERATION – The Canfiber RCO system is designed to run catalytically. In other words, the RCO retention chamber temperature will be 800°F. Standard systems are designed to run at a retention chamber temperature will be 1500°F. Higher retention chamber temperature results in higher fuel consumption and higher NO_x formation.

- MONOLITH MEDIA – The Canfiber RCO has Monolith media. The standard RTO has random saddles, which results in higher pressure drop and higher electricity consumption to obtain the same 95% thermal efficiency (TER).

- HIGHER PROCESS FLOW – The Canfiber RCO system was designed for –12" w.c. at the RTO inlet. Standard RTO system is designed for –2" w.c. at the RTO inlet. This feature enables us to handle higher process flow through the RTO system. The Canfiber RCO system can handle a process flow of 130,000 ACFM.

2.0 PEI WARRANTEED ITEMS

PEI will warrantee for one (1) year (warrantee as described in the Master Purchase Agreement) the following items only:

- Heat recovery media supports
- Housings, blades and shafts of the inlet, outlet and purge valves
- RCO shell

3.0 GEORGIA-PACIFIC RESPONSIBILITY

- Supply the new motor and variable speed drive for the existing RCO ID fan

- Undertake to repair or replace all materials and components on the RCO (other than those listed above) that are determined to be damaged or defective to allow the RCO to operate satisfactorily and to meet its performance requirements as defined in Section 9 – Guaranteed Performance Specifications.

- Loading and offloading, storage and installation of the RCO at the Hosford, FL jobsite.

4.0 PEI RESPONSIBILITY

- Prepay freight and handling changes and charge these to GEORGIA-PACIFIC at net cost
- Supervise the RCO installation at the jobsite. Installation of the RCO to proceed simultaneously with the installation of the two 9-canister dryer RTOs.
- Assist in startup of the RCO in conjunction with GEORGIA-PACIFIC. Startup of the RCO to proceed simultaneously as startup for the two 9-canister dryer RTOs.

5.0 DRAWINGS

- PEI will provide the following drawings, changed to include the operating conditions for the Hosford press emissions:
- General Arrangement and Process Flow Diagram
- All other drawings and details for the existing RCO will be made available to GEORGIA-PACIFIC as required.

SECTION 4: PRO-LINE WASHOUT SYSTEM

The Pro-Line System will be provided for effective off-line washout for the two Hosford, FL dryer 9-canister RTOs, as well as the existing two 9-canister RTOs installed in GEORGIA-PACIFIC's Fordyce, AR OSB plant.

OPERATIONAL DESCRIPTION

<u>OFF-LINE WASHOUT CYCLE</u>

The RTO is off-line and isolated from the process. Off-line RTO operation is at reduced flow using ambient air through the fresh air inlet damper.

The canisters to be washed out are individually selected through the PLC operator interface. The system will be designed to washout one (1), two (2) or three (3) canisters at a time.

When each of the selected canisters reaches the end of its inlet mode (through the normal cycling of the RTO) the canister inlet valves are left open for bed cool-down.

The RTO cycle then converts to a 3-in, 3-out mode (when 3 canisters are selected for washout) with the purge valves in a closed position on all canisters.

The selected washout beds operate as inlet beds until the temperature in the middle of the bed is less than 150°F.

Once this temperature is reached, the RTO completes the cycle it is in and the inlet canister valves on the washout beds close (with the outlet and purge valves still closed). The flow of wash water into the canisters is then manually initiated.

Manual hand valves located at the base of each canister will be used to control the flow of washout water into the canisters. Caution must be taken to insure that no water is released into any canisters not selected and cooled down.

The operator can determine the washout time. PEI expects the total time for washout of a single canister to be 10 – 15 minutes, based on the design volume of the system at 300 gpm per canister.

The washout cycle will be complete when the drain water is clean and free of contaminants. The time required for washout will depend on the degree of particulate deposition in the bed. We suggest that the actual time be established during operation of the system.

Note:

- The canister drains provided at the base of each of the RTO inlet plenums below the bottom media support beams will be used for evacuation of wash water.
  Note: The drain plugs must not be removed until after cool down of the canisters to be washed out is complete.

The following materials of construction are provided:

ITEM	MATERIALS OF CONSTRUCTION
Wash Out Beams	304 Stainless Steel
All Internal Piping	304 Stainless Steel
All External Piping	Carbon Steel
Canister Inspection Doors	304 Stainless Steel

GEORGIA-PACIFIC will designate one of its personnel as its contact for the installation supervisor to work with. This person will be responsible for coordinating the activities of the various departments within the facility so that the installation can proceed smoothly.

It is estimated that the installation supervisor will be on the job site for a period of approximately 14 weeks from the time that the equipment begins arriving at the job site.

Installation supervision as well as startup personnel will be fully confined space trained.

BY GEORGIA-PACIFIC

Oxidizer installation will include the following:

a. Rigging/Assembly

All necessary personnel and equipment to off-load, locate and assemble the equipment.

b. Electrical

- Motor control center (MCC) and starters.
- VSD for the I.D. fan systems.
- All power wiring to the motors
- Interconnecting control wiring between the oxidizers and control rooms
- Installation of main oxidizer control panels in the control rooms.
- Power wiring (from MCC, and VSDs) in the control rooms to all motors, through disconnect switches (I.D. fans, purge/burnout and combustion fans and hydraulic pump units).
- Control wiring from RTO control panels to all field devices.
- Control room located adjacent to the oxidizers including lighting and HVAC. Control room to have two access doors (to meet OSHA requirements) and two windows.
- Control room foundation and building.

c. Piping

- Provide natural gas to the single connection point on the gas train.

- Provide fuel gas piping and hook-up the fuel gas supply lines from the gas trains to the burner manifolds.

- Install the hydraulic equipment and pipe hydraulic fluid lines from the hydraulic power units to the hydraulic actuators.

- Drain piping for Pro-Line System at Hosford and Fordyce.

d. Concrete Foundations

- Design and install all concrete foundations (oxidizer footprint drawings provided by PEI).

- Equipment grounding (grid and grounding connections).

e. In addition to the above, GEORGIA-PACIFIC will also undertake:

- Wiring as required for interlocks between the main oxidizer control panels and the process equipment.

- Spark detection/fire suppression systems.

- Explosion venting.

- Process duct from emission stacks to the oxidizer inlets.

- Mix box (pressure equalization chamber).

f. Insulation

External insulation with jacketing is to be provided on the oxidizers as follows:

- Ductwork
  - Inlet manifolds
  - Purge ducting
  - Outlet manifolds

- Fans/Transitions
  - ID fans
  - Purge fans

- Stack (portions as defined above)

g. General Considerations

In order for the installation work to be completed in a timely fashion and to minimize the time required for the PEI field personnel, PEI suggests that:

- All work to be on an uninterrupted basis.
- A clear and unobstructed access to the work site to be provided at all times
- Any obstructions that interfere with the work in progress to be removed
- Any installation activities (including engineering, testing, start-up, and other related services provided by PEI) involving the "interface" with any of the Customer's process equipment items, are based on the timely availability of such process equipment items as necessary for the work to proceed without interruption.

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SECTION 6: FIELD SERVICES

A trained and qualified PEI technician will be provided to start-up the dryer RTO and press RCO systems, balance all equipment and accessories furnished by us, set all the instrumentation furnished by us and train operator and maintenance personnel. Startup assistance will be provided until the systems are fully operational.

We estimate that the following on-site times will be required for equipment start-up and operator training (normal working weekdays) for the oxidizer systems:

- PEI personnel: 20 days (one man)
- Vendor personnel:
  - Oxidizer I.D. Fans 3 days (one man)

Operator and maintenance training will consist of both field and classroom training sessions.

Total estimated start-up expenses (including per diem charges and travel) are included in the prices given herein.

GEORGIA-PACIFIC's responsibilities to be as follows:

1. Provide a helper for the full start-up period, such helper to be reasonably familiar with Customer's process and equipment.
2. Re-balance, if necessary, Customer's process in a timely manner such that PEI's time on site is not extended.
3. Make every effort to minimize PEI's time on site.

Any major delays caused directly by PEI will not be charged to Customer's account. Delays not caused by PEI will be charged to Customer's account at PEI's normal rates as given below.

Additional time on site, if required for reasons beyond PEI's control and not related to the PTE and/or RTO equipment, will be at PEI's standard rates. Our standard rates are $90.00 per hour for a normal working weekday. Overtime and Saturdays will be billed at $125.00/hour; Sundays and holidays will be charged at $165.00/hour. The rates are applicable on a portal-to-portal basis. Travel and living expenses will be billed at cost plus 10% handling fee.

If field service personnel from other equipment vendor(s) are required, per diem charges will be at the applicable field service rates for those vendor(s).

SECTION 7: PRICES/TERMS

PRICING

Pricing for the oxidizers per the project scope as defined is as follows:

1. 9-Canister Dryer RTOs:

   The supply of two (2) 9-canister OSB Dryer RTOs, including standard 1" saddle chemical porcelain ceramic media, Cycle-Clean™ Smokeless Burnout System, Pro-Line Washout System (both Hosford RTOs and including the two (2) OSB dryer RTOs at GEORGIA-PACIFIC's Fordyce, AR OSB plant):
   ....$4,650,000.00

2. 5-Canister Press RCO:

   The supply of one (1) 5-canister RCO, located at Springfield, OR:

   ....$ 700,000.00

3. Estimated freight for the two (2) 9-canister RTOs:
   ....$ 50,000.00

4. PEI will prepay freight and handling charges for the 5-canister press RCO and charge GEORGIA-PACIFIC at net cost:
   ....$ T.B.A.

PRICE BASIS

All quoted prices are subject to any applicable taxes, permits, and fees.

The price for the two dryer RTOs includes freight to Hosford, FL. The price for the press RCO does not include freight. Freight and handling costs will be prepaid by PEI and charged to GEORGIA-PACIFIC at cost..

TERMS OF PAYMENT

With an approved "original" invoice (no faxed copies) net 30 as follows:

$700,000 - Canfiber "Press" RCO – with the order
10% of balance = ($465,000.00) with the order
10% of balance = ($465,000.00) with receipt of certified drawings and lists per attachment "1"
70% of balance = ($3,255,000.00) with receipt of equipment at jobsite
10% of balance = ($465,000.00) upon completion of and successful performance testing by an outside firm, but not later than 120 days after startup, assuming all other contractual obligations of vendor have been met (including "Punch List" completion and receipt of all documentation by GEORGIA-PACIFIC

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SECTION 8: PROJECT SCHEDULE

PROJECT SCHEDULE

The following project schedule is proposed:

EVENT	PROJECT WEEK
Order Received	0
Approval Drawings Mailed (PFD, P&ID, GA)	4
Approved Drawings Received	6
Equipment Delivery	23
Installation Completed (Estimated - By Others)	37
Startup Completed (By PEI)	40
Performance/Diagnostic Testing (By PEI) Complete	41

Acceleration in schedule may require drawing approval at PEI's Rancho Cucamonga, CA office and authorization to PEI for purchase of long lead items.

Final detailed schedules for the work will be submitted within one week after award of contract. Monthly progress reports will be provided.

SECTION 9: GUARANTEED PERFORMANCE SPECIFICATIONS

The following performance warranty will apply:

1A. OSB DRYER EMISSION ABATEMENT GUARANTEED PERFORMANCE SPECIFICATIONS

Guaranteed Performance Specifications

For the purposes of the Guaranteed Performance Specifications, the air emissions abatement equipment ("Equipment") consists of the following:

- OSB Dryer Emissions

Regenerative Thermal Oxidizer ("RTO") System: Two 9 Canister RTOs.

PEI warrants and guarantees to GEORGIA-PACIFIC that up to the maximum limits of the design conditions set forth in paragraph 3 below, the Equipment shall meet or exceed the following performance specifications:

A. The Equipment is guaranteed to reduce the total organic particulate matter emissions by 90% minimum. Total permitted particulate emissions not to exceed 33.8 lb/hr. from both RTOs.

B. The Equipment is guaranteed to reduce the volatile organic compounds ("VOCs") emissions by minimum 98%, subject to a lower emission limit of 10 ppmvd (as C_1). Total permitted VOC emissions not to exceed 63.1 lb/hr (as C_1) for both RTOs.

C. The Equipment is guaranteed that Carbon Monoxide ("CO") emissions will not exceed the permitted rate of 33.6 lb/hr from both RTOs (85% reduction) when operating the RTO's with natural gas.

D. The Equipment is guaranteed not to exceed 10 ppmvd additional Nitrogen Oxides ("NO_x") above the amount that enters the Equipment when operating the RTO on natural gas. Permitted maximum NO_X emissions (as NO_2) not to exceed 60.0 lb/hr from both RTOs.

E. In no case will the emissions from a single RTO exceed 60% of the limits given above.

F. Opacity (VE) of the RTO stacks will not exceed 5%.

G. Formaldehyde emissions will not exceed 1.85 lb/hr from both RTOs.

The above stated Performance Specifications are hereinafter collectively referred to as the "Guaranteed Performance Specifications" and are based on the RTO inlet conditions as noted in Section 2: Basis of Design.

The following performance warranty will apply:

1B. OSB PRESS EMISSION ABATEMENT GUARANTEED PERFORMANCE SPECIFICATIONS

NOTE: GEORGIA-PACIFIC will undertake to repair or replace all materials and components on the RCO (other than the PEI warranteed items) that are determined to be damaged or defective to allow the RCO to operate satisfactorily and to meet its performance requirements as defined below.

Guaranteed Performance Specifications

For the purposes of the Guaranteed Performance Specifications, the air emissions abatement equipment ("Equipment") consists of the following:

- OSB Press Emissions

Regenerative Catalytic Oxidizer (RCO) System: One 5 Canister RCO

PEI warrants and guarantees to GEORGIA-PACIFIC that up to the maximum limits of the design conditions set forth in paragraph 3 below, the Equipment shall meet or exceed the following performance specifications:

A. The Equipment is guaranteed to reduce the total organic particulate matter emissions by 90% minimum. Total permitted particulate emissions not to exceed 2.8 lb/hr.

B. The Equipment is guaranteed to reduce the volatile organic compounds ("VOCs") emissions by minimum 98%, subject to a lower emission limit of 10 ppmvd (as C_1). Total permitted VOC emissions not to exceed 10.0 lb/hr.

C. The Equipment is guaranteed that Carbon Monoxide ("CO") emissions will not exceed the permitted rate of 7.3 lb/hr (75% reduction) when operating the RTO with natural gas.

D. The Equipment is guaranteed not to exceed 10 ppmvd additional Nitrogen Oxides ("NO_x") above the amount that enters the Equipment when operating the RTO on natural gas. Permitted maximum NO_X emissions (as NO_2) not to exceed 10.7 lb/hr.

E. Opacity (VE) of the RTO stacks will not exceed 5%.

F. Formaldehyde emissions will not exceed 0.24 lb/hr.

The above stated Performance Specifications are hereinafter collectively referred to as the "Guaranteed Performance Specifications" and are based on the RTO inlet conditions as noted in Section 2: Basis of Design.

2. Testing Procedures

2.1 Testing to determine if the Equipment is in compliance with the terms of the Guaranteed Performance Specifications shall be conducted in accordance with the latest version in effect at the time of testing of the following procedures:

A. EPA method 5T and EPA method 201 or 201A and 202 shall be used for the determination of the particulate emission rate. Front half (non-condensible), back half (condensible), organic and inorganic emissions shall be separately evaluated. Testing will be conducted at both the inlet and outlet of the Equipment simultaneously.

B. EPA method 25A shall be used for determination of VOC emissions. Testing will be conducted at both the inlet and outlet of the Equipment simultaneously.

C. EPA method 10 shall be used for determination of CO emissions. Testing will be conducted at the inlet and the outlet of the Equipment simultaneously.

D. EPA method 7 shall be used for determination of NO_x emissions. Testing will be conducted at the inlet and the outlet of the Equipment simultaneously.

2.2 Testing shall be performed by an independent test firm which meets the approval of both GEORGIA-PACIFIC and PEI.

2.3 PEI shall be notified at least ten (10) days in advance of the testing and shall be permitted to have a field service engineer present during the test. The field service engineer shall have the opportunity to adjust the Equipment prior to testing in order to obtain optimum performance provided such adjustments can be made by GEORGIA-PACIFIC during normal operation of the Equipment during the day or days preceding the testing or on the completion of testing that day.

2.4 The testing shall be conducted at the Project Site after the Equipment has been installed, erected and successfully completed the startup procedures. The parties will use their best efforts to conduct the tests within sixty (60) days of successful startup. At least three Performance tests shall be conducted for the Equipment in accordance with the applicable Testing Procedures set forth in paragraph 2 and the Equipment shall be deemed to have met the Guaranteed Performance

Specifications if the average of these three Performance tests show compliance with each of the Guaranteed Performance Specifications in Paragraph 1.

3. <u>Design Conditions</u>

Design conditions are as given in proposal Section 2: Basis of Design.

4. <u>Failure</u>

If the Equipment fails to meet the Guaranteed Performance Specifications (permitted emission limits) when tested as set forth above, PEI shall have a period of time to make whatever modifications and improvements it deems necessary to meet all the Guaranteed Performance Specifications. When PEI has completed modifications, it shall notify

GEORGIA-PACIFIC, and a subsequent series of tests shall be conducted as set forth above to determine if the Equipment meets the Guaranteed Performance Specifications. PEI shall pay for the subsequent costs of the tests.

5. <u>Reliable Test Data</u>

All test data obtained for compliance testing of the systems must be reliable and repeatable for the levels of the compounds to be tested as they appear in the RTO discharge stacks.

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SECTION 10: GENERAL INFORMATION

PAINTING

Field touch up painting will be the responsibility of the Customer.

DRAWINGS AND MANUALS

In general, technical data, drawings and documentation will be in accordance with the requirements as given in the inquiry specification.

Please see Section 8: Project Schedule for drawing submittal timing.

Operating and Maintenance Manuals (3) will be mailed prior to shipment of the equipment.

Prints and manuals are included in the selling price of the equipment. Additional copies of the manuals are available for $350.00 each.

SAFETY CONSIDERATIONS

The proposed equipment will incorporate automatic features for protection and safety; however, while these features and their characteristics afford a degree of safety, operation of the equipment is not to be considered free from all dangers and hazards inherent in the handling and firing of fuel. Proper operating techniques and maintenance procedures, as specified in our manuals, must be observed at all times.

It is possible that condensation of fumes and vapors can occur in the ductwork and heat transfer surfaces. Routine inspection and maintenance of the ductwork and equipment is recommended. Fire suppression system to protect equipment from damage, if required, will be by others.

All insulation used in the oxidizer system will be asbestos-free.

Any removal, alteration, or disposal of any existing asbestos bearing materials are not included in this proposal, and such work is to be by others.

OSHA COMPLIANCE

It is PEI's intent that the equipment and materials described in its proposal shall comply with published OSHA standards; however, the manner in which the system is installed and operated will determine if additional areas of compliance beyond those described are required. Any such work undertaken by PEI will be for the Customer's account.

PEI-manufactured equipment will be painted as described in this proposal. Buy-out proprietary equipment will be supplied with the manufacturer's standard paint coating. All OSHA safety color coatings are to be provided by PEI.

Data on the noise levels of rotating equipment such as fans, blowers, pumps, etc., as determined by the manufacturers, will be supplied upon request. The combined noise levels of rotating equipment and of system operation, in conjunction with the surroundings, cannot be predetermined.

DELAYS

For work performed at the Customer's plant, delays caused by occurrences beyond PEI's control, such as partial or complete shutdowns or irregularities, strikes, floods or fire, which extend PEI's effort, will constitute a Change-of-Scope. Unfavorable conditions which PEI personnel consider a threat to safety or which extend PEI's effort will also constitute a Change-of-Scope and will be billed on the basis of PEI's current schedule of per diem charges, plus direct expenses. The Customer will be promptly notified of any such situations.

HAZARDOUS MATERIALS DISCLAIMER

All reasonable care will be taken to ensure the proposed equipment described herein will not contain asbestos or other hazardous materials. If components used in the manufacture of equipment are discovered to contain such materials, the liability arising from these will be borne solely by the manufacturer of such components. The Customer will certify that asbestos or other hazardous materials will not be present in the area of the work site. Any arising liabilities and decontamination of the work site area will be the sole responsibility of the Customer.

NOISE SPECIFICATION

PEI will submit noise level information, as provided by the manufacturer, for all rotating equipment supplied under the terms of PEI's proposal. No warrantee or guarantee is made or implied as to the overall sound level generated by the installed system as it is impossible to predict the interaction of the various noise sources when operating in conjunction with the existing plant and equipment. PEI will provide guidance and assistance should sound levels exceed Customers expectations. All cost for sound level reduction modifications of the installed equipment shall be by others.

HAZOPS/SAFETY REVIEW

While it is PEI's intent to respond to the Customer's requirements within the scope of this proposal, no specific allowance has been made for PEI's attendance at HAZOPS/Safety Review meetings at the Customer's facility. If such meetings are required, they will be charged at PEI's per diem.

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ATTACHMENTS AND EXHIBITS

EXHIBITS

Exhibit 1: Expected Oxidizer Operating Data

Exhibit 2: Master Purchase Agreement

EXHIBIT 1A
EXPECTED OXIDIZER OPERATING DATA
GEORGIA-PACIFIC – OSB PLANT, HOSFORD, FL

DRYER RTOs: 2 - 9 CANISTER UNITS – CERAMIC BEDS WITH 1" CHEMICAL PORCELAIN STANDARD SADDLES

ITEM	OPERATING DATA (EACH RTO)		
•Dryers / RTO	3 Dryers	2 ½ Dryers	2 ½ Dryers
•Operating Condition	No VOC	With VOC	No VOC
•RTOs Operating	2	2	2
•RTO Inlet (Each RTO)			
-ACFM	192,000	150,000	150,000
-°F	300	300	300
-lb H_2O/lb Dry Air	0.2	0.2	0.2
-SCFM	132,300	103,360	103,360
•Media Beds	Dirty	Clean	Clean
•Operating Data (Each RTO)			
-ID Fan:			
-BHP (based on -2.0" at RTO inlet)	1,115	321	353
-Connected HP	1,200	1,200	1,200
-All Motors Total			
-BHP	1,174	358	417
-Connected HP	1,295	1,295	1,295
-VOC Load lb/hr	0	631.3	0
-Fuel 10^6 BTUH (including heat loss)	12.23	1.60*	9.30

*Heat release by VOCs in excess of energy required to operate the RTO. RTO burners on low fire at approximately 1.6 MMBTUH.

Notes:
1. Operating data are for each RTO.
2. "Maximum" condition represents total flow from three dryers (1 RTO on line) with dirty beds. (i.e., additional 6" w.c. ΔP and a flow of 64,000 ACFM per dryer @ 300°F).
3. "Normal" condition represents 2 RTOs on line, sharing process load 50/50 from 5 dryers with clean beds and a flow of 60,000 ACFM per dryer @ 300°F.
4. RTOs operating on the fuel injection system with combustion air fan shutdown.
5. 1500°F oxidizer operation.
6. VOCs assumed 16,000 BTU/lb lower heating value.

7. Motor List

Motor	HP	Operating BHP*
ID Fan	1200	321
Purge Fan	50	32
Combustion Air Fan	40	0
HPU	5	5
TOTAL	1,295	358

*Each RTO handling 150,000 acfm dryer exhaust flow at 300°F, with clean heat recovery media beds.

EXHIBIT 1B
EXPECTED OXIDIZER OPERATING DATA
GEORGIA-PACIFIC – OSB PLANT, HOSFORD, FL

DRYER RTOs: CERAMIC BED DETAILS

ITEM	DRYER RTOs
• Number of Beds	9
• Bed Dimensions	
- L	11.75'
- W	19.0'
- H	8.0'
• Bed Detail	
- Face Area (Each)	223.25 ft^2
- Face Velocity (inlet std. condition)	
- Maximum - scfm	150 (3 dryers)
• Ceramic Packing:	
- Type	1" Standard Saddles
- Material	Chemical Porcelain
- Ft^3	1,786
- Per Bed	16,074
- Total/RTO	

EXHIBIT 1C
EXPECTED OXIDIZER OPERATING DATA
GEORGIA-PACIFIC – OSB PLANT, HOSFORD, FL

PRESS RCO: 1 - 5 CANISTER UNIT.

ITEM	OPERATING DATA
	CATALYTIC
Operating Condition	WITH VOC
RTO Inlet	
-ACFM	130,000
-□F	150
-lb H_2O/lb Dry Air	0.06
-SCFM	12,200
Operating Data	
-ID Fan:	
-BHP (based on -4.0" at RTO inlet)	590
-Connected HP	700
-All Motors Total	
-BHP	642
-Connected HP	770
-VOC Load lb/hr	50
-Fuel 10^6 BTUH (including heat loss)	5.40

Notes:

1. 800°F catalytic operation.
2. VOCs assumed 16,000 BTU/lb lower heating value.
3. Estimated radiation heat loss is included in net burner figures (based on 60°F, 5 mph ambient air).
4. Motor list:

Motor	HP	Operating BHP
ID Fan	700	590
Purge Fan	40	35
Combustion Air Fans	20	10
HPU	10	7
TOTAL	770	642

EXHIBIT 1D
EXPECTED OXIDIZER OPERATING DATA
GEORGIA-PACIFIC – OSB PLANT, HOSFORD, FL

EXISTING PRESS RCO: CERTAMIC BED DETAILS

ITEM	5-CAN RCO
• Number of Beds	5
• Bed Dimensions - L - W - H	 15.75' 11.5' 5.0'
• Bed Detail - Face Area (Each) - Face Velocity (inlet std. Condtion) - Maximum - scfm	 181.1 310
• Ceramic Packing - Type - Ft^3 - Per Bed - Total/RCO	 Corning Ceramic Monolith 905.6 4,528
• Catalyst - Type - Ft^3 - Per Bed - Total/RCO - Catalyst bed height (in)	Prototech Pro*Ecolith Precious Metals 90 450 6

TANKS 4.0
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Resin Tank
City:	Hosford
State:	Florida
Company:	Georgia-Pacific
Type of Tank:	Vertical Fixed Roof Tank
Description:	PF resin for OSB

Tank Dimensions

Shell Height (ft):	16.90
Diameter (ft):	10.00
Liquid Height (ft):	16.90
Avg. Liquid Height (ft):	12.70
Volume (gallons):	10,000.00
Turnovers:	152.00
Net Throughput (gal/yr):	1,520,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Aluminum/Specular
Shell Condition:	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft):	5.42
Slope (ft/ft) (Cone Roof):	1.08

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Tallahassee, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0
Emissions Report - Summary Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
PF Resin	All	72.46	64.02	80.90	68.46	0.1000	0.1000	0.1000	445.4800			30.03	
Formaldehyde						0.0002	0.0001	0.0002	445.4800	0.0010	0.0000	30.03	Option 1: VP70 = .000143 VP80 = .000218
Unidentified Components						0.1001	0.1001	0.1001	445.4800	0.9990	1.0000	30.03	

TANKS 4.0
Emissions Report - Summary Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
PF Resin	586.90	77.28	664.18
Formaldehyde	0.00	0.00	0.00
Unidentified Components	586.90	77.28	664.18

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4 MARCH 1997

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Job N

Kirk Carpenter

Burners

	PM	VOC	CO	NOX	HCOH
lb/h (exit primary collector)	148.81	252.53	26.87	11.94	3.74
lb/h (Exit Secondary Collector)	99.26 7.9 lbs ODT	252.53	26.87	11.94	3.74
lb/h (exit RTO)	14.89	25.25	6.72	14.66	.37
RTO Removal Efficiency	85.0%	90.0%	75.0%	Add 10 ppm	90.0%
TPY, 8760 h/y	65.22	110.60	29.43	64.21	1.62
TPY, Total (5) Five Dryers	326.10	553.0	147.15	321.05	8.1

Georgia-Pacific

Georgia-Pacific Resins, Inc.
A wholly owned subsidiary of
Georgia-Pacific Corporation

NFPA Ratings
Flammability 2
Health 2
Reactivity 0
Specific

Material Safety Data Sheet

GP® 190C41 WOODWELD® Oriented Strand Board Resin

Section 1. Chemical Product and Company Identification

Product / Trade Name	GP® 190C41 WOODWELD® Oriented Strand Board Resin
Synonyms	SPWC 190C41
Chemical Family	Modified Phenol-Formaldehyde Resin
Chemical Formula	Proprietary
Manufacturer	**Georgia-Pacific Resins, Inc.** 2883 Miller Road Decatur, GA 30035 (770) 593-6874 (Non-Emergency)
Emergency Phone (24 hours):	**CHEMTREC 1-800-424-9300**

Section 2. Composition and Information on Ingredients

Hazardous Components	CAS #	% by Weight	ACGIH TLV™	OSHA PEL
Stearates	Proprietary	< 5.0	TWA: 10 mg/m^3	Not established
Formaldehyde	50-00-0	< 0.1	CEIL: 0.3 ppm	TWA: 0.75 ppm STEL: 2 ppm

TWAs are 8 hour exposures unless otherwise noted. STELs are 15 minute exposures unless otherwise noted.

Section 3. Hazards Identification

HMIS

Health Hazard	2
Fire Hazard	2
Reactivity	0
Personal Protection	

Note: Personal protective equipment (PPE) is related to conditions of use. Determination of PPE is the responsibility of the employer. Refer to *Section 8* **(Exposure Controls / Personal Protection)** of this MSDS for recommendations.

Emergency Overview

Light pink to tan powder; faint phenolic odor.

This product is not expected to be hazardous under normal conditions of use according to the criteria of the OSHA Hazard Communication Standard (HCS).

CAUTION! Powdered material may form explosive dust / air mixtures. Prolonged skin contact may cause irritation to sensitive individuals.

Potential Health Effects

Eye contact This product is not expected to be an eye irritant. However, mechanical irritation may occur due to rubbing or friction. Symptoms may include redness, watering, or itching.

Continued on Next Page

Effective Date: 04/25/2003

Skin Contact	Not expected to be a primary skin irritant or toxic by skin contact. However, cases of skin irritation have been reported upon repeated or prolonged exposure to powdered resin. Symptoms may include itching, scaling, cracking, or reddening.
Inhalation	This product is not expected to be toxic by inhalation. However, prolonged inhalation of dust, or vapors released from curing product may cause respiratory tract irritation. Symptoms may include coughing or shortness of breath, nausea, headaches, or dizziness.
Ingestion	Not expected to be orally toxic. In normal industrial use, ingestion is not considered a probable route of exposure.
Chronic	This product contains formaldehyde which may cause cancer based on animal data. Repeated or prolonged exposure to formaldehyde may cause skin sensitization, dermatitis, or other allergic reactions. The degree of sensitivity varies with individuals.
	This product contains ingredients which may affect the following target organs: **Respiratory system, eyes, skin, kidneys, liver**
	See *Section 11* Toxicological Information for additional information.

Section 4. First Aid Measures

Eye contact	Immediately rinse with water. Remove contact lenses. Hold eyelids apart and flush eyes with water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists. Launder contaminated clothing before reuse.
Inhalation	Remove to fresh air. Rest in half-upright position. Get medical attention if necessary.
Ingestion	If conscious, immediately rinse mouth and give large quantities of water. Get immediate medical attention. Never give anything by mouth to an unconscious person.

Section 5. Fire and Explosion Data

Fire Hazards	Dust explosion hazard exists when material is dispersed in air. Bulk material is not classified as flammable or combustible by OSHA; however, product may burn when exposed to intense heat and flame.		
Flash Point	Not applicable.		
Explosion Limits (g/m^3)	Powder or Dust	LOWER: 40	UPPER: Not available.
Extinguishing Media	Use water spray, dry chemical, or carbon dioxide.		
Fire Fighting Instructions	Use self contained breathing apparatus and protection for skin.		
Combustion Products	Irritating fumes and toxic gases.		
Special Hazards	• Dust explosions may occur when finely divided particles are mixed with air in the presence of an ignition source. • Water runoff can cause environmental damage. Dike and collect water used to fight fire.		

Section 6. Accidental Release Measures

Spill and Leak Procedures	• Do not walk through spilled material. • Confine spill to minimize spreading. • Sweep up or vacuum. Avoid creating dust. DO NOT use pressurized air. • Uncontaminated spilled material may be reused. • Retain all contaminated water for removal and treatment. DO NOT flush to sewer.

Section 7. Handling and Storage

Handling	• Avoid breathing dust. Use only in a well ventilated area. • Avoid eye contact. Avoid repeated or prolonged skin contact. Use proper protective equipment. (see *Section 8*) • Ground and bond product transferring equipment. • Minimize dust generation and accumulation. • Wash thoroughly after handling. • Eyewash stations should be easily accessible to areas where product is used.
Storage	• Storage in a controlled climate is recommended to maintain product integrity. • Store in a cool, dry place at temperatures below 80°F (26.7°C). • Do not store material in direct sunlight. • Store away from incompatible materials. (see *Section 10*)

Section 8. Exposure Controls / Personal Protection

Personal Protective Equipment (PPE)

Eyes and Face: Safety glasses.

Skin: Leather, rubber or neoprene gloves. Wear additional protective clothing as appropriate to protect skin.

Respiratory: None required under normal conditions of use. However, if feasible engineering controls do not prevent overexposure, a dust mask or half-mask respirator with cartridges approved by NIOSH/MSHA for formaldehyde, organic vapors and dusts/mists may be used only when exposure levels are known to be within the unit's capability.
Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any situation where air purifying respirators may not provide adequate protection.
Observe the OSHA respirator regulations cited in 29 CFR 1910.134.

Engineering Controls

Use ventilation as necessary to keep exposure to airborne contaminants below the exposure limits.

Inert or Nuisance Dust	**ACGIH TLV**	**OSHA PEL**
Total Dust (Inhalable)	TWA: 10 mg/m³	TWA: 15 mg/m³
Respirable Fraction	TWA: 3 mg/m³	TWA: 5 mg/m³

Due to the explosive potential of organic dust when suspended in air, precautions should be taken to prevent sparks or other ignition sources in ventilation equipment. The use of totally enclosed motors is recommended.

Section 9. Physical and Chemical Properties

Physical appearance	Light pink to tan powder
Odor	faint phenolic
pH (1:1 in Water)	approximately 9.7
Boiling Point	not applicable

Melting Point	approximately 189°F (87°C)
Bulk Density (lb/ft³)	approximately 36 lb/ft³ (0.58 g/cm³)
Vapor Pressure (mm Hg)	not applicable
Vapor Density	not applicable
% Volatile (w/w)	< 3%
Solubility in Water	soluble

Section 10. Stability and Reactivity Data

Chemical Stability	This product is stable under the recommended storage conditions.
Conditions to Avoid	Avoid storage at temperatures above 80°F (26.7°C). (see Section 7)
Incompatibility with Other Materials	Avoid contact or contamination with strong oxidizers, acids.
Hazardous Decomposition Products	None known.
Hazardous Polymerization	Hazardous polymerization will not occur.
Special Remarks	Powdered or solid material may absorb moisture from the air; keep container tightly closed when not in use. Elevated storage temperatures will shorten product storage life.

Section 11. Toxicological Information

Eye	A similar product was not an eye irritant when tested as described in 29 CFR 1910.1200, Appendix A (OSHA Hazard Communication Standard).
Dermal	A similar product was not a primary skin irritant and was not dermally toxic when tested as described in 29 CFR 1910.1200, Appendix A (OSHA HCS). However, cases of skin irritation have been reported upon repeated or prolonged exposure to powdered resin.
Inhalation	A similar product was not toxic by inhalation when tested as described in 29 CFR 1910.1200 , Appendix A (OSHA HCS).
Oral	A similar product was not orally toxic when tested as described in 29 CFR 1910.1200, Appendix A (OSHA HCS).
Subchronic Effects	Exposure to gaseous formaldehyde may cause temporary irritation of the nose and throat and may lead to respiratory disorders. However, in a thorough review of sensory/respiratory irritation studies of formaldehyde from the standpoint of occupational exposure, an expert panel has observed that exposure to concentrations of 0.3 ppm or lower failed to produce irritation. No irritation will usually be reported at 0.5 ppm, especially if persons are exposed only 8 hours per day. With regard to respiratory disorders, studies have concluded the threshold for long-term exposures causing chronic pulmonary effects is between 0.4 and 3 ppm and chronic obstructive pulmonary disease is 2 ppm. Additionally, persons with asthma responded no differently than healthy individuals at concentrations as high as 3 ppm. Some reports, however, suggest formaldehyde may cause asthma and that pre-existing respiratory disorders may be aggravated by exposure.
Chronic Effects	

Continued on Next Page

Carcinogenicity	Epidemiological studies of workers exposed to formaldehyde have failed to consistently identify an association between formaldehyde exposure and cancer. In animal studies, rats and mice exposed to high levels of formaldehyde developed nasal cancer while hamsters did not. These exposure levels are far above those expected to be found in the workplace. These animal studies provide an inference of carcinogenic hazard for humans. Although human tissue may be inherently susceptible to formaldehyde carcinogenicity, this effect may require exposure to concentrations that humans could not tolerate. Formaldehyde is listed by the International Agency for Research on Cancer (IARC) as a probable human carcinogen (Group 2A). The National Toxicology Program has included formaldehyde in its Annual Report on Carcinogens. OSHA regulates formaldehyde as a potential carcinogen for exposures at or exceeding 0.5 ppm.
Target Organs	See Section 3.

Section 12. Ecological Information

Ecotoxicity	This product is biodegradable under aerobic and anaerobic conditions.

Section 13. Disposal Considerations

Waste Disposal	Dispose of contaminated material in accordance with all federal, state, and local regulations. Dispose of contaminated water in a contained waste treatment system.
RCRA	The requirements of the federal hazardous waste regulations do not apply unless the waste fails to pass any of EPA's four tests for determining hazardous wastes. **Note:** If this product is altered, it is the responsibility of the user to determine whether the material meets the criteria for hazardous waste at the time of disposal.

Section 14. Transportation Information

DOT Non-regulated in bulk and non-bulk bags.

Shipping Description	Bulk Shipments	Non-bulk Shipments
Propper Shipping Name	Non-regulated	Non-regulated
Hazard Class	Not applicable.	Not applicable.
Identification Number	Not applicable.	Not applicable.
Packing Group	Not applicable.	Not applicable.
Reportable Quantities	Not applicable.	Not applicable.
Placards / Labels	**Placards:** Not applicable.	**Labels:** Not applicable.
Special Provisions for Transport		Not applicable.

Section 15. Regulatory Information

Federal Regulations ***The following regulations may have reporting requirements for the components listed. See "Key to Abbreviations and Acronyms" under Section 16 for definitions.***

CERCLA / SARA Emergency Reporting A spill or release of this material may trigger the emergency release reporting requirements under CERCLA (40 CFR Part 300) and/or SARA Title III (40 CFR Part 355). State or local reporting requirements may differ from federal requirements. Consult counsel for further guidance on your responsibilities under these laws.

Formaldehyde, Phenol, Sodium hydroxide

SARA Title III Section 313 Supplier Notification	This product is known to contain the following chemicals which are listed in 40 CFR 372.65 as toxic chemicals requiring notification. This information must be included in all MSDS's that are copied and distributed for this product. **Component** / **CAS #** / **% by Weight** **Not applicable.** / — / —
CWA Section 307	The following chemicals are listed under Section 307 as toxic pollutants not eligible for waiver from best available technology economically achievable (BAT) effluent limitations. **Phenol**
CWA Section 311	The following chemicals are listed under Section 311 as hazardous substances requiring the submission of a National Pollutant Discharge Elimination System (NPDES) permit application to EPA. **Formaldehyde, Phenol, Sodium hydroxide**
TSCA	All components of this product are listed on the Toxic Substances Control Act Inventory or are excluded from listing requirements.
Other Regulations	See the OSHA Formaldehyde Standard 29 CFR 1910.1048 for worker training, workplace monitoring, and medical surveillance requirements. California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product contains the following substance(s) known to the State of California to cause cancer: **Formaldehyde** Canada: All components of this product are listed on the Canadian Domestic Substances List (DSL) or otherwise comply with CEPA new substance notification requirements.

Section 16. Other Information

FDA Status	Not applicable.
Other Special Considerations	To minimize the generation of airborne dust, the use of pressurized air is not recommended for cleaning dust accumulated on floors, beams, or equipment. Although this product is not expected to be hazardous under normal conditions of use, continue to follow standard industrial hygiene practices. Chemical exposure should always be kept to a minimum.
Supersedes Date	None.
Section(s) Changed Since Last Revision	None; Initial version.
Key to Abbreviations and Acronyms	ACGIH - American Conference of Governmental Industrial Hygienists ANSI - American National Standards Institute CEIL - Ceiling value CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act CFR - Code of Federal Regulations CWA - Clean Water Act DOT - Department of Transportation FDA - Food and Drug Administration HCS - Hazard Communication Standard HMIS - Hazardous Materials Information System IARC - International Agency for Research on Cancer LC_{50} - The concentration of a material expected to kill 50% of an animal test group LC_{LO} - Lowest lethal concentration of a substance

Continued on Next Page

LD_{50}	-	The dose of a material expected to kill 50% of an animal test group.
LD_{LO}	-	Lowest lethal dose of a material
MSHA	-	Mine Safety and Health Administration
N.O.S.	-	Not Otherwise Specified
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute for Occupational Safety and Health
NTP	-	National Toxicology Program
OSHA	-	Occupational Safety and Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
RQ	-	Reportable Quantity
SARA	-	Superfund Amendments and Reauthorization Act
STEL	-	Short Term Exposure Limit
TLV	-	Threshold Limit Value (recommended by ACGIH)
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average

IMPORTANT:

This MSDS was prepared and is to be used only for this product in its present form. If this material is altered or used as a component in another material, the information on this MSDS may not be applicable. This document is generated for the purpose of distributing health, safety, and environmental data. It is not a specification sheet nor should any displayed data be construed as a specification. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product.

This information and the data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation, and verification. Buyer assumes all risk of use, storage, and handling of the product in compliance with applicable federal, state, and local laws and regulations.
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Georgia-Pacific

Georgia-Pacific Resins, Inc.
A wholly owned subsidiary of
Georgia-Pacific Corporation

NFPA Ratings
Flammability 2
Health 2
Reactivity 0
Specific

Material Safety Data Sheet

GP® 145C79 WOODWELD® Oriented Strand Board Resin

Section 1. Chemical Product and Company Identification

Product / Trade Name GP® 145C79 WOODWELD® Oriented Strand Board Resin

Synonyms SPWC 145C79

Chemical Family Phenol-Formaldehyde Resin

Chemical Formula $(C_6H_6O \cdot CH_2O)_x \cdot xNa$

Manufacturer **Georgia-Pacific Resins, Inc.**
2883 Miller Road
Decatur, GA 30035
(770) 593-6874 (Non-Emergency Phone)

Emergency Phone (24 hours): **CHEMTREC 1-800-424-9300**

Section 2. Composition and Information on Ingredients

Hazardous Components	CAS #	% by Weight	ACGIH TLV ™	OSHA PEL
Stearates	Proprietary	< 5.0	TWA: 10 mg/m³	Not established
Formaldehyde	50-00-0	< 0.1	CEIL: 0.3 ppm	TWA: 0.75 ppm STEL: 2 ppm

TWAs are 8 hour exposures unless otherwise noted. STELs are 15 minute exposures unless otherwise noted.

Section 3. Hazards Identification

HMIS

Health Hazard	2
Fire Hazard	2
Reactivity	0
Personal Protection	

Note: Personal protective equipment (PPE) is related to conditions of use. Determination of PPE is the responsibility of the employer. Refer to *Section 8* **(Exposure Controls / Personal Protection)** of this MSDS for recommendations.

Emergency Overview Light pink to tan powder; faint phenolic odor.

This product is not considered to be hazardous under normal conditions of use according to the criteria of the OSHA Hazard Communication Standard (HCS).

CAUTION! Powdered material may form explosive dust / air mixtures. Prolonged skin contact may cause irritation to sensitive individuals.

Potential Health Effects

Eye contact This product is not an eye irritant. However, mechanical irritation may occur due to rubbing or friction. Symptoms may include redness, watering, or itching.

Continued on Next Page

Effective Date: 11/05/2001

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Skin Contact	This product is not a primary skin irritant. However, cases of skin irritation have been reported upon repeated or prolonged exposure to powdered resin. Symptoms may include itching, scaling, cracking, or reddening.
Inhalation	Not acutely toxic by inhalation. However, prolonged inhalation of dust, or vapors released from curing product may cause respiratory tract irritation. Symptoms may include coughing or shortness of breath, nausea, headaches, or dizziness.
Ingestion	Not orally toxic. In normal industrial use, ingestion is not considered a probable route of exposure.
Chronic	This product contains formaldehyde which may cause cancer based on animal data. Repeated or prolonged exposure to formaldehyde may cause skin sensitization, dermatitis, or other allergic reactions. The degree of sensitivity varies with individuals.
	This product contains ingredients which may affect the following target organs: **respiratory system, eyes, skin, kidneys, liver**
	See *Section 11* Toxicological Information for additional information.

Section 4. First Aid Measures

Eye contact	Immediately rinse with water. Remove contact lenses. Hold eyelids apart and flush eyes with water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists. Launder contaminated clothing before reuse.
Inhalation	Remove to fresh air. Rest in half-upright position. Get medical attention if necessary.
Ingestion	If conscious, immediately rinse mouth and give large quantities of milk or water. Get immediate medical attention. Emergency personnel should administer activated charcoal and should avoid lavage because of sodium hydroxide, unless large amounts are ingested and threaten potential toxicity with phenol. Never give anything by mouth to an unconscious person.

Section 5. Fire and Explosion Data

Fire Hazards	Dust explosion hazard exists when material is dispersed in air. Bulk material is not classified as flammable or combustible by OSHA; however, product may burn when exposed to intense heat and flame.		
Flash Point	Not applicable.		
Explosion Limits (g/m^3)	Powder or Dust	LOWER: 40	UPPER: Not available.
Extinguishing Media	Use water spray, dry chemical, or carbon dioxide.		
Fire Fighting Instructions	Use self contained breathing apparatus and protection for skin.		
Combustion Products	Irritating fumes and toxic gases.		
Special Hazards	• Dust explosions may occur when finely divided particles are mixed with air in the presence of an ignition source. • Water runoff can cause environmental damage. Dike and collect water used to fight fire.		

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Section 6. Accidental Release Measures

Spill and Leak Procedures

- Do not walk through spilled material.
- Confine spill to minimize spreading.
- Sweep up or vacuum. Avoid creating dust. DO NOT use pressurized air.
- Uncontaminated spilled material may be reused.
- Retain all contaminated water for removal and treatment. DO NOT flush to sewer.

Section 7. Handling and Storage

Handling

- Avoid breathing dust. Use only in a well ventilated area.
- Avoid eye contact. Avoid repeated or prolonged skin contact. Use proper protective equipment. (see Section 8)
- Ground and bond product transferring equipment.
- Minimize dust generation and accumulation.
- Wash thoroughly after handling.
- Eyewash stations should be easily accessible to areas where product is used.

Storage

- Storage in a controlled climate is recommended to maintain product integrity.
- Store in a cool, dry place at temperatures below 80°F (26.7°C).
- Do not store material in direct sunlight.
- Store away from incompatible materials. (see Section 10)

Section 8. Exposure Controls / Personal Protection

Personal Protective Equipment (PPE)

Eyes and Face: Safety glasses.

Skin: Leather, rubber or neoprene gloves. Wear additional protective clothing as appropriate to protect skin.

Respiratory: None required under normal conditions of use. However, if feasible engineering controls do not prevent overexposure, a dust mask or half-mask respirator with cartridges approved by NIOSH/MSHA for formaldehyde, organic vapors and dusts/mists may be used only when exposure levels are known to be within the unit's capability.
Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any situation where air purifying respirators may not provide adequate protection.
Observe the OSHA respirator regulations cited in 29 CFR 1910.134.

Engineering Controls

Use ventilation as necessary to keep exposure to airborne contaminants below the exposure limits.

Inert or Nuisance Dust	ACGIH TLV	OSHA PEL
Total Dust (Inhalable)	TWA: 10 mg/m^3	TWA: 15 mg/m^3
Respirable Fraction	TWA: 3 mg/m^3	TWA: 5 mg/m^3

Due to the explosive potential of organic dust when suspended in air, precautions should be taken to prevent sparks or other ignition sources in ventilation equipment. The use of totally enclosed motors is recommended.

Section 9. Physical and Chemical Properties

Physical appearance	Light pink to tan powder
Odor	faint phenolic
pH (1:1 in Water)	approximately 11.3
Boiling Point	not applicable
Melting Point	> 248°F (120°C)

Continued on Next Page

Bulk Density (lb/ft³)	approximately 32 lb/ft³ (0.51 g/cm³)
Vapor Pressure (mm Hg)	not applicable
Vapor Density	not applicable
% Volatile (w/w)	< 5%
Solubility in Water	soluble

Section 10. Stability and Reactivity Data

Chemical Stability	This product is stable under the recommended storage conditions.
Conditions to Avoid	Avoid storage at temperatures above 80°F (26.7°C). (see *Section 7*)
Incompatibility with Other Materials	Avoid contact or contamination with strong oxidizers, acids.
Hazardous Decomposition Products	None known.
Hazardous Polymerization	Hazardous polymerization will not occur.
Special Remarks	Powdered or solid material may absorb moisture from the air; keep container tightly closed when not in use. Elevated storage temperatures will shorten product storage life.

Section 11. Toxicological Information

Eye	This product is not an eye irritant when tested as described in 29 CFR 1910.1200, Appendix A (OSHA Hazard Communication Standard).
Dermal	This product is not a primary skin irritant and is not dermally toxic when tested as described in 29 CFR 1910.1200, Appendix A (OSHA HCS). However, cases of skin irritation have been reported upon repeated or prolonged exposure to powdered resin.
Inhalation	This product is not toxic by inhalation when tested as described in 29 CFR 1910.1200, Appendix A (OSHA HCS).
Oral	This product is not orally toxic when tested as described in 29 CFR 1910.1200, Appendix A (OSHA HCS).
Subchronic Effects	Exposure to gaseous formaldehyde may cause temporary irritation of the nose and throat and may lead to respiratory disorders. However, in a thorough review of sensory/respiratory irritation studies of formaldehyde from the standpoint of occupational exposure, an expert panel has observed that exposure to concentrations of 0.3 ppm or lower failed to produce irritation. No irritation will usually be reported at 0.5 ppm, especially if persons are exposed only 8 hours per day. With regard to respiratory disorders, studies have concluded the threshold for long-term exposures causing chronic pulmonary effects is between 0.4 and 3 ppm and chronic obstructive pulmonary disease is 2 ppm. Additionally, persons with asthma responded no differently than healthy individuals at concentrations as high as 3 ppm. Some reports, however, suggest formaldehyde may cause asthma and that pre-existing respiratory disorders may be aggravated by exposure.
Chronic Effects	
Carcinogenicity	Epidemiological studies of workers exposed to formaldehyde have failed to consistently identify an association between formaldehyde exposure and cancer. In animal studies, rats and mice exposed to high levels of formaldehyde developed nasal cancer while hamsters did not. Those exposure levels are far above those expected to be found in the workplace. These animal studies provide an inference of carcinogenic hazard for humans. Although human tissue may be inherently susceptible to formaldehyde carcinogenicity, this effect may require exposure to concentrations that humans could not tolerate. Formaldehyde is listed by the International Agency for Research on Cancer (IARC) as a probable human carcinogen (Group 2A). The National Toxicology Program has included formaldehyde in its Annual Report on Carcinogens. OSHA regulates formaldehyde as a potential

	carcinogen for exposures at or exceeding 0.5 ppm.
Target Organs	See Section 3.

Section 12. Ecological Information

Ecotoxicity	This product is biodegradable under aerobic and anaerobic conditions.

Section 13. Disposal Considerations

Waste Disposal	Dispose of contaminated material in accordance with all federal, state, and local regulations. Dispose of contaminated water in a contained waste treatment system.
RCRA	The requirements of the federal hazardous waste regulations do not apply unless the waste fails to pass any of EPA's four tests for determining hazardous wastes. **Note:** If this product is altered, it is the responsibility of the user to determine whether the material meets the criteria for hazardous waste at the time of disposal.

Section 14. Transportation Information

DOT	Non-regulated in bulk and non-bulk bags.

Shipping Description	Bulk Shipments	Non-bulk Shipments
Propper Shipping Name	Non-regulated	Non-regulated
Hazard Class	Not applicable.	Not applicable.
Identification Number	Not applicable.	Not applicable.
Packing Group	Not applicable.	Not applicable.
Reportable Quantities	Not applicable.	Not applicable.
Placards / Labels	**Placards:** Not applicable.	**Labels:** Not applicable.
Special Provisions for Transport	Not applicable.	Not applicable.

Section 15. Regulatory Information

Federal Regulations ***The following regulations may have reporting requirements for the components listed. See "Key to Abbreviations and Acronyms" under Section 16 for definitions.***

CERCLA / SARA Emergency Reporting

A spill or release of this material may trigger the emergency release reporting requirements under CERCLA (40 CFR Part 300) and/or SARA Title III (40 CFR Part 355). State or local reporting requirements may differ from federal requirements. Consult counsel for further guidance on your responsibilities under these laws.

Formaldehyde, Phenol, Sodium hydroxide

SARA Title III Section 313 Supplier Notification

This product is known to contain the following chemicals which are listed in 40 CFR 372.65 as toxic chemicals requiring notification. This information must be included in all MSDS's that are copied and distributed for this product.

Component	CAS #	% by Weight
Not applicable.	—	—

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CWA Section 307	The following chemicals are listed under Section 307 as toxic pollutants <u>not</u> eligible for waiver from best available technology economically achievable (BAT) effluent limitations. **Phenol**
CWA Section 311	The following chemicals are listed under Section 311 as hazardous substances requiring the submission of a National Pollutant Discharge Elimination System (NPDES) permit application to EPA. **Formaldehyde, Phenol, Sodium hydroxide**
TSCA	All components of this product are listed on the Toxic Substances Control Act Inventory or are excluded from listing requirements.
<u>Other Regulations</u>	See the OSHA Formaldehyde Standard <u>29 CFR 1910.1048</u> for worker training, workplace monitoring, and medical surveillance requirements. <u>California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):</u> This product contains the following substance(s) known to the State of California to cause cancer: **Formaldehyde** <u>Canada:</u> All components of this product are listed on the Canadian Domestic Substances List (DSL) or otherwise comply with CEPA new substance notification requirements.

Section 16. Other Information

FDA Status	Not applicable.
Other Special Considerations	To minimize the generation of airborne dust, the use of pressurized air is not recommended for cleaning dust accumulated on floors, beams, or equipment. Although this product is not considered to be hazardous under normal conditions of use, continue to follow standard industrial hygiene practices. Chemical exposure should always be kept to a minimum.
Supersedes Date	01/15/1999
Section(s) Changed Since Last Revision	2. Composition and Information on Ingredients 5. Fire and Explosion Data 15. Regulatory Information
Key to Abbreviations and Acronyms	ACGIH - American Conference of Governmental Industrial Hygienists ANSI - American National Standards Institute CEIL - Ceiling value CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act CFR - Code of Federal Regulations CWA - Clean Water Act DOT - Department of Transportation FDA - Food and Drug Administration HCS - Hazard Communication Standard HMIS - Hazardous Materials Information System IARC - International Agency for Research on Cancer LC_{50} - The concentration of a material expected to kill 50% of an animal test group. LC_{LO} - Lowest lethal concentration of a substance LD_{50} - The dose of a material expected to kill 50% of an animal test group. LD_{LO} - Lowest lethal dose of a material MSHA - Mine Safety and Health Administration N.O.S. - Not Otherwise Specified NFPA - National Fire Protection Association NIOSH - National Institute for Occupational Safety and Health NTP - National Toxicology Program OSHA - Occupational Safety and Health Administration PEL - Permissible Exposure Limit (OSHA) RCRA - Resource Conservation and Recovery Act RQ - Reportable Quantity SARA - Superfund Amendments and Reauthorization Act

Continued on Next Page

STEL	-	Short Term Exposure Limit
TLV	-	Threshold Limit Value (recommended by ACGIH)
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average

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MATERIAL SAFETY DATA SHEET

MSDS Name: BLUE ULTRASEAL
MSDS Number: PF6026-21
Version Number 0009
MSDS Date: 05/25/01

SECTION I - PRODUCT AND COMPANY INFORMATION

Product Name:	BLUE ULTRASEAL
CAS Number	MIXTURE
Hazard Rating:	Health: 1 Fire: 1 Reactivity: 0 PPI: E
EPA Registration	NA
Company Identification:	Associated Chemists, Inc. 4401 S.E. Johnson Creek Blvd. Portland OR 97222
Contact:	CUSTOMER SERVICE
Telephone/Fax:	(503) 659-1708 (503) 653-0409
Emergency Phone (24 Hour):	INFOTRAC (800) 535-5053
Preparer	ROALD K. BERG, CHMM ENVIRONMENTAL MGR.
Product Class	WATERBASE PAINT
Trade Name	BLUE ULTRASEAL
Product Code	PF6026-21

SECTION II - INGREDIENT AND HAZARD INFORMATION

Hazardous Ingredients	CAS Number	%	TSCA	Health	Fire	React	PP
(No hazardous ingredients known at this time.)							

SECTION III - HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:
Ingestion and/or inhalation.
CARCINOGENICITY:
This product does not contain any substance(s) listed as a carcinogen by NTP, IARC, or OSHA.
ACUTE (SHORT TERM) FOR PRODUCT:
EYES: Causes irritation.
SKIN: May cause skin irritation upon prolonged or repeated contact.
BREATHING: Causes slight irritation to nose and throat.
SWALLOWING: Ingestion may cause nausea, vomiting, diarrhea.
CHRONIC (LONG TERM) FOR PRODUCT OR COMPONENTS:
Prolonged or repeated breathing of sprays, mists, or dusts in excess of the suggested TLV may cause nasal and respiratory irritations.
PERMISSIBLE EXPOSURE LEVEL FOR PRODUCT:
No Threshold Limit Value (TLV) has been established for the product. Current Adopted Values listed by ACGIH suggests a TLV of 10 mg/m3

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as Inhalable Particulates Not Otherwise Classified for sprays, mists or dust particulates generated during application or handling exposures.

SECTION IV - FIRST AID MEASURES

IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes. If irritation continues, see a physician.
IF ON SKIN: Flush skin with water.
IF SWALLOWED: Induce vomiting. Call a physician immediately. Give large amounts of water or milk. Never give anything by mouth to an unconscious or convulsing person.
IF BREATHED: Remove person to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

SECTION V - FIRE-FIGHTING MEASURES

Flammability Class IIIB
Flash Range:
Explosive Range: Not Applicable

EXTINGUISHING MEDIA:
Extinguishing media: Product is non-combustible.
SPECIAL FIREFIGHTING PROCEDURES:
Use self-contained breathing apparatus with full facepiece.
UNUSUAL FIRE & EXPLOSION HAZARDS:
Dried residues of this product contain petroleum waxes which may be potentially ignited and support combustion when contacted by cutting or welding torches, flame, or other ignition sources. Avoid contact of ignition sources with dried residues.
RECOMMENDED FIRE EXTINGUISHERS: DRY CHEMICAL, FOAM, OR CO2.

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
SMALL SPILLS: Contain spill immediately. Use inert material to absorb spilled material. Place absorbed spill into secure container for removal.
LARGE SPILLS: Use caution; spilled material may be extremely slippery. Contain spill immediately and prevent from entering the sewer system. Use an inert material to absorb spilled product.
NOTE: Rinsing this material down a sanitary sewer system can

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cause negative impact on monitoring systems. Contact local sewer authorities before attempting any discharges.

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
PROTECT FROM FREEZING. Store above 40 deg. F. Frozen product may be irreversibly damaged.
Keep container closed when not using. Agitate before using.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL

RESPIRATORY PROTECTION:
Use an approved MSHA or NIOSH respirator for nuisance mists, dusts, or sprays.
VENTILATION:
Use adequate ventilation to keep airborne concentrations below exposure standard listed in Section II and/or Section V.
PROTECTIVE GLOVES:
None normally required. Use is advisable.
EYE PROTECTION:
Wear approved splashproof chemical goggles. In a controlled environment where eye contact is minimal, Safety glasses with side shields may be sufficient protection.
OTHER PROTECTIVE EQUIPMENT:
Avoid contact with clothing, dried product may be irremovable.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Form:	LIQUID
Appearance/Color:	BLUE
Odor:	MILD
Solubility (in water):	DISPERSIBLE
pH Value:	9.5-10. 9.8
Boiling Range:	212 F 0.F (-17.78C)
Vapor Pressure (mmHg):	17(WATER) 17.@ 68.F (20.C)
Melting Point:	Not Available
Evaporation Rate:	Non Volatile
Vapor Density:	Non Volatile
Partition Coefficient	Not Available
Volatile Volume	INCLUDING WATER 50.46%
Specific Gravity:	1.08433

MATERIAL SAFETY DATA SHEET

VOC	SEE SECTION XVI
Molecular Weight:	NA

SECTION X - STABILITY AND REACTIVITY

Stability:	This product is stable
Hazardous Polymerization:	Hazardous polymerization will not occur

INCOMPATABILITY:
None
CONDITIONS TO AVOID:
Acids, strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS
Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.

SECTION XI - TOXICOLOGICAL INFORMATION

Lethal Dose Information (ppm)

ADDITIONAL TOXICOLOGICAL DATA FOR PRODUCT AND/OR INGREDIENTS:
None known for product.

SECTION XII - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION FOR PRODUCT AND/OR INGREDIENTS:
Aquatic toxicity not available.

SECTION XIII - DISPOSAL CONSIDERATIONS

EPA Hazardous Waste Number

WASTE DISPOSAL METHOD:
Product must be disposed of properly under Federal/State regulations for industrial waste. Disposal to a landfill may be permitted pending compliance with 40 CFR 264.314 & 265.314. This product when spilled or disposed of is a non-hazardous waste as defined in RCRA regulations (40 CFR 261).

SECTION XIV - TRANSPORT INFORMATION

UN Number	NONE
UN Pack Group	NA
UN Class	NA
ICAO/IATA Class	
Shipping Name	
D Hazard Class	NOT HAZARDOUS
Technical Name	

MATERIAL SAFETY DATA SHEET

MSDS Name: BLUE ULTRASEAL
MSDS Number: PF6026-21
sion Number 0009
. JS Date: 05/25/01

CANADIAN TDG/WHMIS INFORMATION:

PIN NUMBER: None

TDG: NA

TDG ACT CLASS: NA

WHMIS: D2B

OTHER NAMES: None

SECTION XV - REGULATORY INFORMATION

EEC Classification Irritant

This product is not a listed hazardous substance.

SECTION XVI - OTHER INFORMATION

ADDITIONAL PRECAUTIONS AND NOTES:
not dilute or mix with other materials unless advised by supplier.
OC INFORMATION
A Certified Product Data Sheet (CPDS) as outlined under Title 40 Part 63, Subpart JJ, Section 63.801 Definitons, detailing VOC content, will be available upon request from Associated Chemists Inc. Environmental Department.

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MEC DRYER SYSTEM EMISSIONS ES.IMATE

G-P CORP. 4/15/98

FORDYCE, ARKANSAS (1) OF (5) 1360-T DRYERS BCB

MAXIMUM CONDITIONS EADGPEM3

CASE NO:	90-A
CAPACITY, OD LB/HR:	25,124
INLET TEMP. F:	1,336
SENSIBLE HEAT,MMBTU/H:	44.32
BURNER HEAT, MMBTU/H:	48.02
PM, PRIMARY COLLECTOR:	UHE
EM FACTOR W/WOOD:	11.85
PM, FRONT, LB/HR:	119.05
PM, BACK, LB/HR:	29.76
PM, TOTAL, LB/HR:	148.81
PM, SECONDARY:	CA
EFFICIENCY:	33.3%
PM LB/HR:	99.26
PM, TERTIARY:	RTO
EFFICIENCY:	85.0%
PM EMISSIONS LB/HR:	14.89
VOC, PRIMARY:	UHE
HWD E-FACTOR:	2.80
SYP E-FACTOR:	20.10
HWD CONTENT, %:	0.0%
CUT, %:	100.0%
TOTAL VOC, LB/HR:	252.53
VOC, SECONDARY:	CA
D/R EFFICIENCY:	0.0%
TOTAL VOC, LB/HR:	252.53
VOC, TERTIARY:	RTO
D/R EFFICIENCY:	90.0%
VOC EMISSIONS LB/HR:	25.25
CARBON MONOXIDE:	
BURNER E.F. LB/MMBTU:	0.25
BURNER, LB/HR:	11.08
DRYER E.F. LB/OD TON:	1.26
DRYER, LB/HR:	15.79
TOTAL, LB/HR:	26.87
RTO D/R EFFICIENCY:	75.0%
CO EMISSIONS,LB/HR:	6.72
NOX (BURNER ONLY):	
E.F., LB/MMBTU:	0.269
NOX, LB/HR:	11.94
RTO ADD NOX, PPM:	10.00
AIRFLOW, SCFM:	47,500
ADD NOX, LB/HR:	2.72
NOX EMISSIONS, LB/HR:	14.66
HCOH	
HWD E.F. LB/OD TON:	2.37
SYP E.F. LB/OD TON:	0.30
HWD CONTENT, %:	0.0%
TOTAL, LB/HR:	3.74
RTO D/R EFFICIENCY:	90.0%
HCOH EMISSIONS, LB/HR:	0.37

Calculations for Sulfur Dioxide from Dryers/RTO (used AP-42; values not provided by vendor)

AP-42 Factor for firing wood fuel in boilers = 0.15 lb/ton wood fuel fired (wet basis)

Dryer has 5 burners at 40 MMBTU/hr each, for a total of 200 MMBTU/hr

Thermal oil heater (combustion products ducted to dryer system) has 2 burners at 40 MMBTU/hr each, for a total of 80 MMBTU/hr

Total exiting dryer system = 280 MMBTU/hr

Sulfur dioxide emissions:

280 MMBTU/hr x lb/4500 BTU x ton/2000 lbs x 0.075 lb SO_2/ton = 2.3 lbs/hr (10.2 tpy)

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MEC COMPANY

Neodesha, Kansas U.S.A.

By BCB

REV. 29 MAY 1998
Date 14 MARCH 1997

Customer GEORGIA-PACIFIC CORPORATION

Job No. D-0160-3 Location FORDYCE, ARKANSAS Sht. No. 2 of 10

PRESS EMISSIONS

EMISSION POINT NO. 2

Basis: 475 MM, 20% Fines, 120% ODMC, Peak Flow

From: L-P, OSB, Hanceville, AL Press RTO Testing June, 1994, 350 MSF production

	PM	VOC	CO	NOX	HCOH
RTO Removal Efficiency	75.0%	90.0%	-	-	98.0%
Test (lb/h)	2.08	14.74	5.33	7.89	.18
Factor 475 MM/y / 350 MM/y	1.36	1.36	1.36	1.36	1.36
lb/h	2.83	20.05	7.25	10.73	0.24
TPY 8760 h/y	12.4	87.82	31.76	47.00	1.05

17.5

M·E·C COMPANY

Neodesha, Kansas U.S.A.

REV. 29 MAY 1998

By BCB Date 14 MARCH 1997

Customer GEORGIA-PACIFIC CORPORATION

Job No. D-0160-3 Location FORDYCE, ARKANSAS Sht. No. 3 of 10

SCREEN FINES W/SAW TRIM TRANSFER PNEUMATICS CP-003
EMISSION POINT NO. 3

Saw Trim Transfer (CP-004) From CP-001
= 4,911 lb/h

From Flowrate Determination, 475 MM, 20% Fines

Screen Fines
From Flowrate Determination, (20%)
= 21,334 lb/h

4,911	lb/h Saw Trim
21,334	lb/h Screen Fines
26,245	lb/h Total

Receiver is 80% eff per MFH
Filter is 99.96% eff MAC Model 144 MCF 153

$\therefore (1-.8)(1-.9996)\ 26{,}245\ \text{lb/h} = 2.1\ \text{lb/h}$
x4.38

$\dfrac{8760\ \text{h/y}}{2{,}000\ \text{lb/ton}} = 4.38$ Factor

$\boxed{9.20\ \text{TPY}}$

Calculation based on 0.01 grains/dscf:

(.01 gr/dscf)(13,171 dscfm)(60 min/h)(1 lb/7000 grains) = 1.13 lb/h
x4.38

$\boxed{4.95\ \text{TPY}}$

SAW TRIM/FINISHING LINE PNEUMATICS CP-001
EMISSION POINT NO. 4

From Flowrate Determination, 475 MM, 20% Fines

Trim Saws Remove: $\boxed{4,911 \text{ lb/h}}$

Receiver is 80% eff per MFH
Filter is 99.96% eff per MAC (Model 144 MCF 361)
∴ (1-.8)(1-.9996) 4,911 lb/h= .39 lb/h
x4.38

$$\frac{8760 \text{ h/y}}{2,000 \text{ lb/ton}} = 4.38 \text{ Factor}$$

$\boxed{1.71 \text{ TPY}}$

Calculation based on 0.01 grains/dscf:

(.01 gr/dscf)(30,733 dscfm)(60 min/h)(1 lb/7000 grains) = 2.63 lb/h
x4.38

$\boxed{11.52 \text{ TPY}}$

MEC COMPANY

Neodesha, Kansas U.S.A.

By BCB

REV. 26 AUGUST 1997
Date 14 MARCH 1997

Customer GEORGIA-PACIFIC CORPORATION

Job No. D-0160-3 Location FORDYCE, ARKANSAS Sht. No 5 of 10

MAT REJECT/FLYING SAW PNEUMATICS CP-005
EMISSION POINT NO. 5

From Flowrate Determination, 475 MM, 20% Fines

Mat Reject:

M sqft/day = 1334

Ton/day = 896

$\therefore$ Mat = 1.3434 lb/ft^2
Mat = 8' x 24' = 192 ft^2
Mat = 247.9 lb

Assume reject 3 Mat in 21.6 hours

$\therefore$ (3) (257.0 lb)/21.6 H) = $\boxed{\text{35.8 lb/h from Mat Reject}}$

Flying Saws:

Assume Remove ≅ 4"/Mat on 8' Side

$\therefore$ 4"/12" x 8' = 2.66 ft^2/Mat
@ 1,334,000/21.6 h = 61,759 ft^2/h
61,759 ft^2/h/192 ft^2/Mat = 321 Mat/h

Remove 2.66 ft^2/Mat on 321 Mat/h = 853.9 ft^2/h
@ 1.3434 lb/ft^2

$\therefore$ $\boxed{\text{1,147 lb/h from Saw}}$

CP-005 Handles:

35.8 lb/h Mat Reject
1,147.0 lb/h Flying Saw
1,183.8 lb/h Total

MEC COMPANY

Neodesha, Kansas U.S.A.

By BCB Rev. 29 May 1999 Date 14 Mar. 1999

Customer GEOGRIA-PACIFIC CORPORATION

Proposal No. D-0014-9 Location FORDYCE, ARKANSAS Sht.No. 6 of 10

CP-005 Cont.:

- Assume 120" Collector @ 0% Removal as instantaneous loading does not set up a vortex.

Receiver is 80% eff per MFH
Filter is 99.96% eff per MAC Model 144 MCF 361

(1-.8) (1-.9996) 1,183 lb/h = .09 lb/h
x4.38

$\frac{8760\ h/y}{2{,}000\ lb/ton}$ = 4.38 Factor $\boxed{.4\ \text{TPY}}$

Calculation based on 0.01 grains/dscf:

(.01 gr/dscf) (45,720 dscfm) (60 min/h) (1 lb/7000 grains) = 3.90 lb/h
x4.38
$\boxed{17.08\ \text{TPY}}$

MEC COMPANY

Neodesha, Kansas U.S.A.

By BCB

REV. 29 MAY 1998
Date 14 MARCH 1997

Customer GEORGIA-PACIFIC CORPORATION

Job No. D-0160-3 Location FORDYCE, ARKANSAS Sht. No 7 of 10

SPECIALTY SAW/SANDER PNEUMATICS CP-006
EMISSION POINT NO. 6

From Flowrate Determination, 475 MM, 20% Fines:
Sander Removes .009" Total $\frac{.009"}{12"/ft}$ = .0008' Per MFH

Assume 100% Sanded
From Flowrate Determination, 475 MM, 20% Fines:

61,759 ft^2/h x .0008'
= 49.4 ft^3/h
@ 46 ft^3 Board Density

= $\boxed{2,272 \text{ lb/h}}$

Specialty Saw (T & G)
T & G Removes 2.34% by Weight Per MFH

Assume 100% is T & G
From Flowrate Determination, 475 MM, 20% Fines:

83,006 lb/h x .0234 = $\boxed{1,942 \text{ lb/h}}$

CP-006 Handles:

2,272 lb/h Sander
1,942 lb/h T & G
4,214 lb/h Total
=====

Receiver is 80% eff per MFH
Filter is 99.96% eff MAC Model 144 MCF 255

∴(1-.8)(1-.9996) 4,214 lb/h = .34 lb/h
x4.38

$\frac{8760 \text{ h/y}}{2,000 \text{ lb/ton}}$ = 4.38 Factor

$\boxed{1.49 \text{ TPY}}$

Calculation based on 0.01 grains/dscf:
(0.1 gr/dscf)(25,343 dscfm)(60 min/h)(1 lb/7000 grains) = 2.17 lb/h
x4.38

$\boxed{9.50 \text{ TPY}}$

FUEL SYSTEM PNEUMATICS CP-006
EMISSION POINT NO. 7

From Flowrate Determination, 475 MM, 20% Fines
From Specialty Saw Filter 4,214 lb/h

Receiver is 80% eff per MFH
Filter is 99.96% eff MAC Model 72 AVR7
∴ (1-.8)(1-.9996) 4,214 lb/h = .34 lb/h
x4.38

$\frac{8760 \text{ h/y}}{2{,}000 \text{ lb/ton}} = 4.38$ Factor

$\boxed{1.5 \text{ TPY}}$

Calculation based on 0.01 grains/dscf:

(.01 gr/dscf)(490 dscfm)(60 min/h)(1 lb/7000 grains) = 0.04 lb/h
x4.38

$\boxed{0.18 \text{ TPY}}$

mEC COMPANY
Neodesha, Kansas U.S.A.

By BCB
Rev. 29 May 1998
Date 14 Mar. 1999

Customer GEOGRIA-PACIFIC CORPORATION

Proposal No. D-0160-3 Location FORDYCE, ARKANSAS Sht.No. 9 of 10

FORMING BINS PNEUMATICS CP-002

EMISSION POINT NO. 8

From Flowrate Determination, 475 MM, 20% Fines

"Press+Line Losses"

(87,974-87,095) = $\boxed{879\ \text{lb/h}}$

Receiver is 80% eff per MFH
Filter is 99.96% eff per MAC (Model 144 MCF 153)
∴ (1-.8) 1-.9996) 879 lb/h = .07 lb/h
x4.38

$\frac{8760\ \text{h/y}}{2{,}000\ \text{lb/ton}}$ = 4.38 Factor $\boxed{.31\ \text{TPY}}$

Calculation based on 0.01 grains/dscf:

(.01 gr/dscf) (22,140 dscfm) (60 min/h) (1 lb/7000 grains) = 1.90 lb/h
x4.38
$\boxed{8.32\ \text{TPY}}$

MEC COMPANY

Neodesha, Kansas U.S.A.

By BCB   REV. 29 MAY 1998
Date 14 MARCH 1997

Customer GEORGIA-PACIFIC CORPORATION

Job No. D-0160-3 Location FORDYCE, ARKANSAS Sht. No 10 of 10

HAMMERMILL SYSTEM PNEUMATICS
EMISSION POINT NO. 9

Hammermill Grinds = 26,245 lb/h

Receiver is 80% eff per MFH
Filter is 99.96% eff MAC Model 144 MCF
$\therefore$ (1-.8) (1-.9996) 26,245 lb/h = 2.1 lb/h
x4.38

$\frac{8760 \text{ h/y}}{2{,}000 \text{ lb/ton}}$ = 4.38 Factor

$\boxed{9.20 \text{ TPY}}$

Calculation based on 0.01 grains/dscf:

(.01 gr/dscf) (14,700 dscfm) (60 min/h) (1 lb/7000 grains) = 1.26 lb/h
x4.38

$\boxed{5.52 \text{ TPY}}$

PPC Industries
3000 East Marshall Longview, TX 75601
903-758-3385 Fax 903-758-6487

QUOTATION

Quotation No. 02107, Rev. 1

Date: 10/11/02

Delivery: See Sect. V.

F.O.B. Jobsite

Page 1 of 10

Contact: Gerry Graham

Georgia-Pacific Corporation
133 Peachtree Street NE
Atlanta, GA 30348

Attention: Mr. Allen Dees
Fax #404/230-5689

Reference: Your Inquiry of 09/20/99

We are pleased to offer you the following firm quotation for one of our modular electrostatic precipitators for your two M-E-C 40 MMBTU thermal oil heater systems to be located at Hosford, FL.

I. DESIGN BASIS

A.	Volume (ACFM)	75,000
B.	Temperature (° F)	700
C.	H_2O in flue gas (% by vol.)	10
D.	Heat imput (MMBTU/hr)	80
E.	Inlet to precipitator (#/hr)	56.48
	(PM 10)	55.90
F.	Emission rate (lbs/MMBTU)	0.10
G.	Dust source	M-E-C thermal oil heater systems
H.	Fuel	pine wood waste
	Quantity (#/hr)	9,412

II. SCOPE OF WORK BY PPC INDUSTRIES

A. **PRECIPITATOR:** PPC is offering one Model **11R-1228-2712P** modular electrostatic precipitator including all collecting plates, rigid discharge electrodes, roof sections, insulator compartments, access doors, all internal components and power supplies to make a complete air pollution control assembly.

1. The electrostatic precipitator will have the following design features:

Gas velocity (ft/sec)	4.06
Treatment time (seconds)	5.0
Aspect ratio (treatment length/treatment height)	0.73
Treatment length (feet)	20.4
Collecting area (square feet)	12,577
SCA (sq. ft./1,000 acfm)	167.7
Power consumption (kw)	21.5
Pressure drop (inches of wc)	0.50
Structural design temp. (° F.)	800

ACCEPTED

BY:____________________

PPC INDUSTRIES

BY: Bill Fridley

Hopper capacity (cubic feet)	962
Number of gas passages	11
Spacing of gas passages (inches)	12
Number of discharge electrodes	154
Lineal feet of discharge electrodes	4,312
Transformer output voltage(kv)	55
Transformer output current (ma)	400
Installed weight (excluding dust, insulation, and support steel)	101,200

2. The collecting plates will be constructed from solid rolled steel sheets not less than 18 gauge. The sheets will be adequately stiffened and baffled to give quiet gas areas at the surface of the plate to minimize re-entrainment. Both top and bottom alignment guides, stiffeners and mountings will maintain the alignment of plates while permitting thermal expansion. The plates will be designed for a maximum temperature excursion to 800° F.

3. Electromagnetic uplift-gravity impact rappers will be provided. The rapping systems will be arranged to operate automatically and will be designed to minimize particulate re-entrainment. The rapper control will have adjustable frequency and intensity features.

4. Rigid electrodes will be provided and they will be fabricated from 16 gauge seamless tubing with uniformly spaced corona studs welded to the tubing. The electrodes will be stabilized and supported to maintain alignment at all temperature ranges of the precipitator's operation.

5. Each discharge electrode frame will be vibrated individually and the system will be designed such that both duration and frequency of vibration can be varied.

6. Two step up transformers/rectifiers will be provided with the precipitator. Each set will be an outdoor type, oil insulated, self-air cooled unit with full-wave rectifiers. The transformer and rectifiers will be in the same tank. The transformer will be provided with a grounding switch and a key interlock. Each set will be rated for temperature rise of 45° C (at a maximum ambient of 50° C).

7. The high tension support insulators will be of the cylindrical, compression load type. The insulators will be porcelain, glazed inside and outside and will have ground ends. The insulators will be located out of the gas treatment area, and will be kept clean by purge air.

8. The precipitator will be furnished with key type safety interlocks with a sequential key arrangement to prevent access to any high voltage equipment without locking out the power supply and grounding the high voltage equipment. The following equipment will be interlocked: all quick opening precipitator access doors, transformer/rectifier ground switches and high voltage control unit circuit breakers.

9. Welded weatherproof individual insulator compartments will be provided to house insulators. The insulator compartments will be accessible by access doors with safety interlocks to prevent access to all high voltage areas except until the precipitator is de-energized and grounded.

10. The electrostatic precipitator shell will be fabricated from 3/16" thick ASTM A-36 steel plate with external ASTM A-36 structural stiffeners as required to support the electrostatic precipitator pressure, wind, live, and dead loads. The shell will be seal welded to form a totally gas tight structure.

11. The precipitator will be equipped with two transverse trough type hoppers. Each hopper will be fabricated from 3/16" ASTM A-36 steel plate, and supported with ASTM A-36 external structural shapes as required to support the hopper loads. Each hopper will be designed to support its weight when full of particulate. Particulate density is 65 lb/cu.ft. for structural sizing and 45 lb/cu.ft. for hopper capacity sizing. In addition, the hoppers will be of sufficient capacity to store particulate collected over a minimum period of 12 operating hours. The sides will be sloped to provide a minimum hopper wall angle of 60° from the horizontal. The end angle will be adjusted to insure a minimum hopper valley angle of 55°. The discharge opening will be 18" wide x 6'-0". Each hopper will be

equipped with the following accessories.

a. **Access and Poke Holes:** Each hopper will have a quick opening, key interlocked access door and a three (3) inch diameter poke hole.

b. **Vibrator Pads:** A vibrator pad will be provided on one side of each hopper. The pad will be drilled to accommodate a vibrator for future mounting by purchaser if required to enhance dust removal.

c. **Heaters:** PPC will shop install 2.5 kw, 480 volt, single phase, 60 HZ, electrical heaters on each hopper underneath the hopper insulation. The heater system will be complete with a temperature controller and thermostat mounted in a junction box located on the side of the hopper. Field electrical hookup to the power source will be by the purchaser.

B. **PRECIPITATOR SUPPORTS:** The precipitator will include all structural steel with self-lubricating slide plates between the precipitator and support structure. The structural steel will be designed to provide for 8' - 0" clearance between the hopper discharge and grade.

C. **NOZZLES:** The precipitator will be equipped with flanged inlet and outlet nozzles. The nozzles will be fabricated from externally stiffened 3/16" thick ASTM A-36 steel plate.

1. ***Inlet:*** *The inlet nozzle will be a horizontal entry pyramid type with the bottom angle of the nozzle* 45° from the horizontal. The inlet nozzle will include three flow distribution screens to assure uniform flow through the precipitator. No access is required.

2. **Outlet:** The outlet nozzle will be a horizontal discharge pyramid type with the bottom angle of the nozzle 60° from the horizontal. The outlet nozzle will include a flow distribution device to assure uniform flow through the electrostatic precipitator. No access is required.

D. **ACCESS:** The access to be supplied will meet OSHA standards and it will be furnished as follows:

1. The precipitator will have a caged ladder from grade to the roof of the electrostatic precipitator.

2. PPC will provide factory installed hand railing with kick plate around the perimeter of the roof of the precipitator. Handrails and vertical posts will be 2" square tubing.

3. Access openings to the hopper, roof and high voltage compartments will be 24" diameter. All access openings will be equipped with quick opening, hinged steel doors and gas tight seals. A safety key interlock system and high voltage warning signs will be provided for all quick opening access doors. All access doors will be easily accessible from walkways except those on the hopper.

4. No access ladders will be provided to the hopper manways.

E. **INSULATION & SIDING:**

1. **Insulation:** PPC will provide factory insulation of the electrostatic precipitator (including shell, hopper, inlet and outlet nozzles). The insulation will consist of 3" of 8# density mineral wool on all surfaces except the electrostatic precipitator roof. The precipitator roof will be insulated with 6" of 8# density mineral wool plus 2" fiberglass insulation over the stiffeners and then covered with ¼" checkered plate.

2. **Siding:** The insulation on the inlet nozzle, outlet nozzle and electrostatic precipitator sides will be covered with 0.032" thick, unpainted, stucco embossed, Type 3003, 1 x 4 box ribbed aluminum

sheeting. The siding will run vertical and will be overlapped one section at all seams.

The insulation on the hoppers will be covered with 0.032" thick, unpainted, stucco embossed, Type 3003 flat sheeting. All flashing seams will be covered with flat material as well. All openings will be filled with EPDM synthetic rubber closure strips to match the siding contour.

The siding material will be attached with TEK #4.5 12-24 x 1¼" Climaseal screws with neoprene washers. All sheet to sheet connections will be with ¼- 14 x ⅞" stitching screws with neoprene washers. All siding seams subject to moisture infiltration will be sealed with clear silicon sealant prior to assembly.

F. **PAINTING:** PPC will paint the structural supports, access, insulator compartments, handrails and roof exterior with one coat of red primer and one coat of medium industrial gray enamel finish paint. All hot metal surfaces that will be exposed after the field insulation is completed will be painted with two coats of silicon based aluminum colored high temperature paint. All ladders, platforms (including supports) and railings will be finish painted with safety yellow enamel.

G. **ELECTRICAL CONTROL EQUIPMENT:** The following electrical control equipment will be furnished by PPC.

1. **Power Distribution Panel:** A NEMA 4 precipitator power distribution panel will be mounted on the roof. This panel will house the main circuit breaker, distribution bus, individual circuit breakers and the required distribution wiring.

2. **Roof Equipment Panel:** A NEMA 4 precipitator roof equipment panel, mounted on the roof will be furnished with local collecting plate rapper controls, local discharge electrode vibrator controls and local purge air blower controls.

3. **T/R Controller:** PPC will provide a NEMA 4 microprocessor type high voltage control enclosure mounted on the side of each roof mounted transformer/rectifier. All components will be accessible through a hinged front door. The voltage controls will be completely automatic with auxiliary manual control. Both manual and automatic systems will provide full range control. Arc suppression will be provided by a current limiting device to reduce the voltage when a spark over condition exists in the precipitator. The controllers will be rated for a maximum ambient of 122°F. All enclosures will be constructed of 12 gauge steel and painted with ASA 61 gray enamel.

4. **Remote Control:** PPC will provide a remote graphics voltage controller (GVC) for each transformer/rectifier. Each GVC controller will be mounted in a remote control panel. The standard size of the remote panel for a two field electrostatic precipitator is 24" wide x 24" high x 8" deep. Three field electrostatic precipitators are six additional inches high. Other sizes may be required depending on the options selected.

The graphics controller provides bar graph and digital read outs of primary and secondary voltages and currents, as well as kw, spark rate, SCR conduction angle and the status of the T/R. This remote panel is to be mounted in the customers control room. Alarms will be provided on the GVC control unit for AC overcurrent, T/R over temperature, SCR high temperature, SCR imbalance, loss of memory, DC undervoltage and DC overvoltage. A main menu is provided to select functions for operation and troubleshooting. The graphics controller display is 16 lines x 40 characters wide. The unit can produce V/I curves, 24 hour trend plots, and 30 minute trend plots. The operator can remotely set all precipitator parameters such as setback, rise rate, current limit, etc. On line help text is available for making all adjustments.

Each controller will also have three indicator lights next to each GVC. These lights are for Control On, HV On, and Alarm.

H. **SHOP INSTALLED ELECTRICAL:** PPC will mount the transformer/rectifiers and install the high voltage bus ducts and bus bars. PPC will provide conduit and will wire from the roof equipment panel to the rappers, vibrators and blowers. PPC will mount all high voltage insulators, vibrator insulators and feed-thru insulators. PPC will provide and install terminal boxes at all field roof joints (customer required to make field terminations between field roof joints).

I. **FIELD CONSTRUCTION SERVICES (NON-UNION):**

1. **Mechanical:** PPC will do the mechanical erection of precipitator supports, electrostatic precipitator and access. The flashing of field insulation seams and touch up finish painting will be performed by PPC. PPC will do the grouting. Foundations, anchor bolts, inlet ductwork (unless specifically offered in this proposal), finish painting (other than that listed elsewhere), the grounding system, etc. will be done by the purchaser. Crane move in - move out expense is not included.

2. **Electrical:** All field electrical work is to be by the purchaser. The purchaser shall provide power to the power distribution panel and shall make the final wiring terminations. In addition, the purchaser shall field install the remote control panel and install all required wiring from the remote control panel to each transformer/rectifier on the roof of the precipitator. Each transformer/rectifier requires six #14 wires and one two-conductor shielded #16 wire in the appropriate size conduit. The purchaser shall provide power, control and alarm wiring to all optional equipment such as conveyors, hopper heaters, level detectors, hopper vibrators, etc.

3. **Field Services:** PPC will have one factory authorized representative at the site during the proposed construction. The representative will supervise and coordinate all the work. An inspection by the purchaser shall be made at the completion of the field erection. The correction of any punch list items shall be made before the construction advisor leaves the jobsite. PPC's quotation is based on no delay between the completion and the correction of the punch list items. Any additional trips and/or delays required by purchaser and not the fault of PPC will be billed per our attached Standard Terms and Conditions of Sale of Field Services.

J. **ENGINEERING AND TECHNICAL SERVICES:** PPC will provide a complete engineering for the above electrostatic precipitator including:

1. Foundation loading diagrams and anchor bolt patterns.
2. Erection and interface drawings.
3. Operators manual (3 copies).
4. Recommended spare parts lists.
5. Complete electrical package on AutoCad.

PPC will supervise the precipitator start-up, initial operation and will train the purchaser's personnel in the operation and maintenance of the equipment. The charge for this service will be as set forth in the attached Standard Terms and Conditions for Field Services.

K. **WORK BY OTHERS:** All work not specificaly mentioned as part of PPC's scope of work will be by the purchaser or by other parties.

III. <u>PERFORMANCE AND TESTING GUARANTEE</u>

A. **PARTICULATE:** The proposed equipment, when operating at design conditions, is guaranteed to emit not more than 0.10 lbs. of particulate per MMBTU or to remove 85.8% by weight of the inlet particulate load. If the inlet particulate load is greater than the design conditions the efficiency of 85.8% is guaranteed; if it is equal or less than the design conditions a residual of 0.10 lbs. of particulate per MMBTU is guaranteed.

B. **OPACITY:** PPC guarantees the one hour average opacity of the flue gas when operating at design conditions to be less than 10%. The opacity shall be determined by a certified smoke reader or certified opacity monitor.

C. **QUALIFICATIONS:** The particulate sampling method will be per the Environmental Protection Agency Method No. 5 as outlined in the Federal Register. Particulates are defined as solids at the precipitator operating conditions that can be collected. Condensibles are not included. A series of three consecutive tests shall be performed. If the average emissions from three acceptable tests is equal to or below the guarantee level then the unit has fulfilled the performance guarantee. The performance guarantee is not valid unless precipitator is insulated.

D. **TEST PERIOD:** The unit must be tested within 30 days after initial equipment operation or 90 days after the final truck shipment; whichever occurs first. If the unit is not tested within this time period, it shall be considered as accepted.

IV. PRICING AND OPTIONS

A. All prices quoted are firm for 30 days from the quotation date. No duties, fees or taxes are included. Sales tax or an equivalent amount will be charged if a sales tax exemption certificate is not sent to PPC by the purchaser.

B. The total price for the work as set forth in Sections I, II and III is . . . . $ 437,000.00
NOTE: Crane move in - move out expense is not included.

C. **OPTIONS:**

1. **Conveyor/Airlock:** Each hopper will be provided with a nine inch diameter half-pitch, flare through screw conveyor. The conveyor troughs will be fabricated from 3/16" thick A-36 plate and will be flanged and gasketed onto the electrostatic precipitator hoppers. The conveyor will have a 1 hp TEFC drive motor and a Class II shaft mount reducer. Final drive speed will be approximately 8 rpm. The discharge will be a 8" square flange. The conveyor will have a Meyer (or equal) Heavy Duty six vane rotary airlock driven off the conveyor tailshaft.

Price (installed, but not wired) . . . . $ 10,500.00

2. **Equipment Access Stairs:** In lieu of a caged ladder from grade to the roof of the electrostatic precipitator, PPC will provide and install equipment access stairs from grade to the roof. The equipment access stairs will be 2' - 6" wide with galvanized steps and painted integral railings. The equipment access stairs will have intermediate and roof level landings. The landings will have painted kickplates and painted integral railings. The handrails and posts will be 2" square tubing. Paint system will be as per base proposal.

Price installed . . . . $ 10,600.00

3. **Roof Cover:** PPC will provide and shop install a "carport style" roof cover over the top of the electrostatic precipitator roof deck. The enclosure will have a 0.040" thick 1" x 4" box ribbed, stucco embossed, unpainted aluminum siding, roof. The electrostatic precipitator roof will still have 2' x 2'

square tubing handrails. The siding will match the balance of the precipitator.

Price installed . . . . $ 9,500.00

4. **DCS Control System Interface:** PPC will provide a distributive control system interface to permit direct communications between the customer's distributive control system and the control units on the electrostatic precipitator. The interface supports Modbus RTU or ASCII protocol. Communications parameters such as baud rates, stop bits, and parity can be configured by the user. The unit can be located at the remote GVC panel. The purchaser must write software to interrogate the protocol and create .bmp screens to display operational information. The system can be configured for start/stop/alarm/interlock and other operational parameters if desired.

Price . . . . $ 6,800.00

D. **INSURANCE:** The above sales price is contingent on PPC's standard levels of insurance which are: General Liability- $1,000,000 per occurrence, Business Auto - $1,000,000 per each accident, Products Liability - $1,000,000 per occurrence and Umbrella Liability - $5,000,000 per occurrence /aggregate. If any extra levels of insurance are required or if any additional endorsements are required, they will be invoiced at cost.

V. SCHEDULE OF DELIVERY

PPC will deliver and install the proposed equipment according to the following schedule. Time is calculated from the receipt of the order by PPC.

A. Equipment Arrangement and Loading Diagrams . . . . 2 weeks
B. Material Shipment . . . . 20 weeks
C. Erection Complete . . . . 24 weeks

VI. SCHEDULE OF PAYMENT

The schedule of payment is 15% of contract price upon receipt of order, 15% four weeks after receipt of order, 20% eight weeks after receipt of order, 15% twelve weeks after receipt of order, 15% upon initial shipment, 15% upon completion of erection and the balance upon successful completion of performance tests or 30 days after completion of erection, whichever is sooner. All invoices are Net 30 Days.

VII. TERMS AND CONDITIONS OF SALE

The following attachments are made a part of this quotation:

A. Standard Terms and Conditions of Sale.
B. Standard Conditions of Sale for Field Services.

STANDARD TERMS AND CONDITIONS OF SALE

1.0 Material Warranty
1.1 PPC Industries (hereafter called PPC) warrants that the equipment to be delivered hereunder will be free from defects in material a workmanship under normal use and service for a period of 1 year after completion of delivery if the Purchaser installs the equipment or 1 year fr completion of installation if PPC installs the equipment, whichever is the sooner. This warranty does not cover products, accessories, parts, equipment which are not manufactured by PPC. All others shall receive such warranty, if any, as given by the manufacturer. This warranty shall not apply where the defect is caused by corrosion or abrasion, careless or improper handling, storage, transportation, or installation, or where defects are remedied by others, or where operating instructions are not adhered to, or where alteration or substitutions have been made in the equipment without PPC's prior written approval.
1.2 PPC's obligation under this warranty is limited to and shall be fully discharged by PPC when at its own expense and option, PPC repairs any defective part or supplies without charge a similar part which is shown to PPC's satisfaction to have been defective as to material or workmanship when shipped.

2.0 No Other Warranties, Guarantees and Obligations:
2.1 The warranties furnished by PPC are exclusive and in lieu of all other warranties (including any implied warranty of merchantability or fitness for a particular purpose), except that of title, whether written, oral or implied, in fact or in law.
2.2 Correction of non-conformities in the manner provided above shall constitute the entire liability of PPC with respect to such equipment unless otherwise expressly provided in this contract.
2.3 In no event, be it due to a breach of any warranty or guarantee hereunder or any other cause arising out of performance or non-performance of this quotation or contract, shall PPC be liable for (1) consequential or indirect loss or damage, including but not limited to, loss of profits, plant down-time or suits by third parties against the Purchaser, or (2) loss or damage arising out of the sole or contributory negligence of the Purchaser, its employees, agents, Engineers or Architects, or any third-party.
2.4 Only such safety devices as are specified in the quotation will be furnished by PPC. All other safety devices required or desirable due to the nature of the equipment or the Purchaser's operation of the equipment are the responsibility of and will be obtained by the Purchaser. The Purchaser hereby releases PPC from any and all liability arising out of the Purchaser's improper use of the equipment or from the absences of proper safety devices.

3.0 Performance Guarantee
3.1 PPC's guarantee is based upon data furnished to PPC concerning the conditions under which the equipment is required to perform and the Purchaser accepts responsibility for the correctness of such data.
3.2 PPC's obligation under this guarantee is limited to and shall be fully discharged by PPC, if PPC at its expense, makes changes or additions in the equipment which PPC deems necessary to enable the equipment to meet the performance guarantee and the equipment will be made available to PPC for this purpose. If PPC is unable to modify the equipment so that it meets the performance guarantee, PPC will make such adjustments in the purchase price as are fair and reasonable, but in no event will PPC's obligation including expenditures for changes and additions hereunder, exceed the amount of the purchase price paid to PPC for the proprietary material.
3.3 PPC makes no representation that the equipment does or will comply with any code or regulation of any pollution control authority or other government body and PPC will not undertake or have any obligation to obtain permits, licenses or approval from said authority or government body concerning the equipment.

4.0 Test of Equipment
4.1 PPC's representative must be present at the plant site during all performance tests. The equipment shall be adjusted and operated under the direction of PPC's representative during the test period.
4.2 The Purchaser shall give PPC at least ten days notice in writing of the time and place appointed for the tests.
4.3 All test costs are to be at the Purchaser's expense including the service of PPC's service man.
4.4 PPC's representative is to have access to the test records at all times and to have the cooperation of the Purchaser in conducting prelimin tests, equipment modifications and/or adjustments as PPC's representative may deem necessary.
4.5 If the equipment is operated by the Purchaser before it is accepted, Purchaser will, if requested by Vendor, restore the equipment to good operational condition before any performance tests are conducted.

5.0 Taxes, Duties, and Permits
5.1 All sales, use, gross receipts or other taxes assessed to PPC on the equipment or on its sale, installation or use, and all duties, excises and other charges levied on or with respect to the equipment by any governmental body, shall be for the account of the Purchaser unless otherwise specified in the PPC's quotation. Each and every billing invoice from any resulting contract are part of any such contract.
5.2 All building permits and construction certificates required by local and state authorities will be obtained by the Purchaser.

6.0 Force Majeure
PPC shall not be liable for any loss or damage arising out of delay in shipment or delivery, or failure to manufacture or failure of the equipment to operate, due to causes beyond its reasonable control, such as, but not limited to, acts of God, acts of Purchaser, acts of civil or military authority, priorities, fires strikes, floods, epidemics, quarantine restrictions, war, riot, delays in transportation, car shortages, and PPC's inability to obtain necessary labor, materials, or manufacturing facilities. In the event of any such delay, the date of delivery shall be extended for a period equal to the time lost by reason of the delay.

7.0 Shipment and Storage
7.1 Unless otherwise specified in PPC's quotation, all freight, insurance, handling, loading and unloading, local delivery, and other costs incurred in shipping the equipment to point of installation shall be for the account of the Purchaser.
7.2 If the Purchaser for any reason is unable or unwilling to accept delivery of the equipment when it is ready for shipment, it may be stored by PPC at the Purchaser's expense and risk. At PPC's request, the Purchaser shall make arrangements for suitable storage without expense or risk to PPC.

8.0 Payment
8.1 PPC will retain a security interest in the equipment to secure payment in full of the equipment price pursuant to the terms herein specified, notwithstanding transfer of title and risk of loss to the Purchaser.
8.2 If the payment is not made in accordance with the terms of sale, the Purchaser agrees to reimburse PPC for all costs and expenses reasonably incurred in collecting the account including but not limited to reasonable attorney fees not to exceed 20% of the debt.
8.3 A delinquency charge will be applied to all overdue monies due the PPC at the rate of one and one-half per cent (1 1/2%) per month of the total amount outstanding.

9.0 Installation
9.1 Unless otherwise specified in PPC's quotation, the Purchaser will be responsible to supply all labor, supervision, equipment, and supplies for the erection, assembly, and operation of the proposed equipment and all other related items including foundations, supports, platforms, ladders, drains, electrical equipment, piping and any and all other materials except those integral with the quoted equipment.
9.2 PPC reserves the right to subcontract any part of the installation work included in the quotation.
9.3 PPC assumes no responsibility for materials or work supplied or performed by others. Neither does PPC assume responsibility for damage to property other than that engineered and manufactured by PPC arising from or caused by defect in workmanship n any product of, or by actions of, any third party.

10.0 Services in Connection with Equipment Sold
Unless the purchaser requires otherwise, all conferences between the Purchaser's representative and PPC's representative, whether they pertain to engineering, contractual matters or other items, will take place at Longview, TX. If the Purchaser requires any conferences to take place other than in Longview, then each of PPC's representatives attending the conference will be provided in accordance with PPC's Standard Conditions of Sale for Field Services.

11.0 Equipment, Contract Changes and Contract Extras
11.1 PPC reserves the right to make changes in the design or arrangement of the equipment at any time prior to delivery, which in PPC's judgment will improve the equipment or its installation or performance.
11.2 Any changes requested by the Purchaser in the plans, specification or contract, any delay to PPC's performance caused by the Purchaser or its subcontractors or any unknown physical conditions at the site of an unusual nature differing materially from those ordinarily encountered in work of the character provided in the quotation or contract which result in additional expenses, (including overhead) to PPC shall be for the Purchaser's account and are in addition to the contract price.
11.3 PPC makes no claims on the ability of equipment not manufactured by PPC to satisfy national, state and local building, health or safety codes. PPC will be absolved of liabilities or any expenses in making alterations or damages arising out of failure of the equipment not manufactured by PPC to meet these regulations.
11.4 PPC requires detailed physical locations of existing Purchaser equipment. The Purchaser will supply the required drawings, sketches or data at the Purchaser's expense. The Purchaser will be responsible for reimbursing PPC for any additional engineering, fabrication or erection costs incurred because of incomplete data or errors in the information provided by the Purchaser.

12.0 Confidential Material
All drawings, specifications and information included in PPC's quotation or contract, and all information otherwise supplied by PPC relating to the erection, operation and maintenance of the equipment, is the confidential property of PPC. The Purchaser shall not disclose such confidential property to others including affiliate operations of the Purchaser, or allow others to use such property except as required for the Purchaser to obtain service for the equipment purchased from PPC.

13.0 Arbitration
Any arbitration required pursuant to this quotation shall be in accordance with the Rules of the American Arbitration Association, provided that notwithstanding anything to the contrary contained in such Rules, (1) the substantive law to be applied shall be as specified in paragraph 22, (2) no substantive provision of this quotation shall be abrogated, (3) the issue submitted to arbitration shall be limited to that specified in the Guarantee, and (4) the place of arbitration shall be Longview, TX.

14.0 Assignment
A contract or purchaser order shall not be subject to assignment by either party without the prior written consent of the other party.

15.0 Cancellation
The purchaser's cancellation of a contract is subject to a cancellation charge of (1) the actual expenses and expenses to which PPC has become committed for fulfillment of the contract before notice of cancellation is received plus (2) the larger of sixty five percent of item (1) expenses or twenty percent of the contract price.

16.0 Contract Interpretation
16.1 If any of the provisions of these Standard Terms and Conditions of Sale including statements made in the quotation conflict with any provisions in the Purchaser's documents, the former shall govern unless PPC expressly agrees to the contrary in writing. Any contract resulting from this quotation shall be construed, and the legal relations of PPC and the Purchaser shall be determined, in accordance with the laws of the State of Texas, U.S.A.
16.2 All communications, written and verbal, between the parties hereto with reference to the subject of this quotation prior to the date of its acceptance are merged herein and this quotation, when duly accepted and approved, shall constitute the sole and entire agreement and contract between the parties as to the subject matter thereof. No changes in or modifications of said agreement shall be binding upon the parties or either of them, unless they shall be in writing duly accepted by the Purchaser and approved in writing by PPC.

17.0 Acceptance
Unless otherwise specified in PPC's quotation, this quotation is subject to acceptance by the Purchaser within thirty (30) days. Purchaser's acceptance of this quotation by purchase order or letter of intent to purchase shall constitute a binding agreement with PPC unless the quotation is withdrawn by PPC within ten days immediately following the Purchaser's acceptance.

18.0 Erection Delays
If PPC's quotation includes equipment field erection, the quoted price is based on a continuity of erection work that is not impaired by completion of work by the Purchaser or his subcontractors (such as foundations), Purchaser's plant operation scheduling, Purchaser's tie-in scheduling, Purchaser's work or safety permits or similar delays. If through no fault of the PPC, the erection is delayed or postponed the Purchaser shall reimburse PPC for all additional costs, including overhead and profit, incurred from such delays or postponements.

19.0 Offsite Facilities
19.1 If required, the Purchaser shall be responsible for supplying general utilities to PPC's usage point.
19.2 Unless specified otherwise in PPC's quotation, foundations and any required subterranean grounding with the associated grounding tie-in shall be supplied by the Purchaser.

20.0 Receiving Equipment
20.1 The Purchaser agrees that prior to arrival of PPC's erection crew to receive and unload without charge to PPC all equipment that is shipped direct to jobsite which is supplied by PPC but manufactured by others. When receiving equipment, Purchaser shall be responsible for inspecting equipment before unloading and shall immediately notify PPC of any damage of shortage. The unloading of equipment by the Purchaser without proper inspection and PPC notification will be construed as the Purchaser's acceptance of the equipment and he shall assume the responsibility of making good any damages that later may be discovered. The Purchaser shall be responsible for any damage occurred during the unloading and any erection delay caused by the damage.
20.2 If material manufactured by PPC is ready for shipment in accordance with the contract shipping schedule and the Purchaser delays erection schedule, the Purchaser has the option of receiving the material at the jobsite, unloading and rehandling to the site at no cost to PPC or the assumption of costs of extra handling and storage at a place other than the jobsite. Materials manufactured by PPC that are in transit at the time of the erection schedule delay must be unloaded, stored and rehandled by the Purchaser at the Purchaser's expense.

21.0 Patent Warranty
PPC shall defend at its expense any suit brought against the Purchaser based upon any claim that the equipment covered herein infringes any USA patent providing PPC is promptly notified by the Purchaser in writing of such claim.

22.0 Foreign Shipments
22.1 The Purchaser shall obtain all necessary export licenses and permits required to clear the shipment for entry into the foreign country.
22.2 Unless otherwise specified in the quotation, no special export packing is included.

STANDARD CONDITIONS OF SALE FOR FIELD SERVICES

All field services shall be furnished by PPC Industries (hereinafter referred to as PPC) to act in an advisory capacity in accordance with the following terms and conditions of sale.

1.0 RATES

1.1 From the day the PPC representative leaves his basing point up to and including the day of his return to his basing point, payment shall be made at the rate of $860.00 for each regular work day, regardless of whether actual work is performed or not.

1.2 The regular work day is to be eight hours, Monday through Friday (except holidays).

1.3 Time and a half shall be paid for all hours actually worked in excess of the original eight on Monday - Friday, and for the initial eight hours worked on Saturdays. Double time shall be paid for all hours actually worked on Sundays or holidays, and for all after the initial eight on Saturdays. If work is not performed, and/or the PPC representative is traveling, laying over, or otherwise away from his basing point for whatever reason, the regular work day rate shall apply.

2.0 EXPENSES

2.1 The daily rate specified in 1.1 includes all living expenses, except lodging, for the PPC representative. Administrative and overhead charges (clerical), telephone, telegraph, reproduction facilities, etc. are included.

2.2 The daily rate does not include written reports. If Purchaser requires a written report from the PPC representative, the time he spends in preparing it shall be invoiced at a rate of $50.00 per hour.

2.3 The daily rate does not include any transportation or travel related expenses. Transportation and travel related expenses are for Purchaser's account, and will be invoiced at actual cost. In addition, should a vehicle belonging to either PPC or the PPC representative be used for part or all of the required travel, Purchaser will be invoiced $0.75 per mile traveled.

3.0 GENERAL

Long periods away from home can create domestic problems. Personnel in the field will be allowed a trip home every three weeks -- the daily rate shall not apply, but all transportation expenses shall be for Purchaser's account.

4.0 CANCELLATION

In the event a service requirement is cancelled less than three working days before a previously agreed upon start date, a cancellation fee of one day's service will be charged.

5.0 INDEPENDENT CONTRACTOR

5.1 PPC shall be considered an independent contractor in respect to all work herein provided for and the representative furnished by PPC under this agreement will not in any sense be considered an employee of the Purchaser.

5.2 The representative shall be utilized in an advisory capacity and PPC will not be liable for any damage to equipment, loss of time or product, for production rates of workmen, and quality of field workmanship. The Purchaser will have the direct responsibility for planning, supervising and executing the work; under such circumstances, neither PPC nor the representative will be responsible for the progress or cost of the work.

5.3 All personnel required to meet OSHA standards for confined space entry shall be provided by Purchaser. Safety equipment shall also be prov[illegible] by customer.

6.0 INTERLOCK INDEMNITY

6.1 If PPC previously provided a key interlock system with the original electrostatic precipitator(s) or are furnishing additions or alterations to the original system or are providing the initial key interlock system under this contract, the following shall apply:

6.2 For said interlock systems to be an effective means of protecting persons involved in precipitator operation and maintenance, said system must be maintained in an as new condition and there should not exist extra or additional keys for the system. Should the interlock system be tampered with, compromised or otherwise not maintained in its proper operating conditions or should the purchaser, its employees, agents, engineers or anyone else acting on behalf of the purchaser obtain by any means whatsoever extra or additional keys for said interlock system, the purchaser agrees to indemnify and hold harmless PPC, its officers, employees, and agents from any and all liability arising therefrom.

ATTACHMENT C
US EPD Memorandum on NSPS Applicability

BEST AVAILABLE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

NOV 17 1992

RECEIVED
FEB 5 1993
NATIONAL PARTICLEBOARD ASSOCIATION

MEMORANDUM

SUBJECT: Applicability of NSPS Subparts Db/Dc to Process Dryers

FROM: Bruce Jordan, Director
Emission Standards Division (MD-13)
Office of Air Quality Planning and Standards

TO: See Below

Questions have been raised recently concerning the applicability of the new source performance standards (NSPS) for steam generating units (40 CFR Part 60, Subparts Db and Dc) to process dryers and various types of kilns, such as cement kilns. Subparts Db and Dc do not apply to process dryers or kilns.

A steam generating unit is defined under Subparts Db and Dc as any device which combusts any fuel to produce steam, heat water, or heat any heat transfer medium. A heat transfer medium is defined as any material used for transferring heat from one point to another point (§60.41b and §60.41c).

Although steam generating units are frequently used to generate steam, as the term implies, it is not uncommon to find these same types of devices used to heat water, air, or other heat transfer mediums (e.g., Dowtherm®) to provide space heating or process heating. As a result, the definition of steam generating unit was intentionally made quite broad in Subparts Db and Dc so the NSPS would not be limited solely to units generating steam.

There are a number of similarities between steam generating units and process dryers or kilns. Both combust fuel. In addition, process dryers frequently "transfer" heat to a heat transfer medium. Normally this is ambient air introduced into the combustion gases following combustion to reduce the temperature of the gases to the level necessary for proper drying of the material(s) being dried. It is much less common for kilns to transfer heat to a heat transfer medium. Normally the combustion gases are passed directly over or through the material(s) being dried or preheated and no heat transfer medium is involved.

On the other hand, there are a number of differences, particularly in design and appearance, between steam generating units and process dryers or kilns. Steam generating units, whether they are used to generate steam or heat water, air, or other heat transfer mediums are similar in design and tend to look much the same. Process dryers and kilns, however, are quite different in design than steam generating units and generally look very different.

The key to distinguishing between a steam generating unit and a process dryer or kiln, however, is the method of heat transfer between the combustion gases and the heat transfer medium (if a heat transfer medium is involved). In a steam generating unit there is a physical barrier between the combustion gases and the heat transfer medium (e.g., the waterwall or tubes in the steam generating unit). Thus, there is no direct contact or intermixing of the combustion gases and the heat transfer medium.

As a result, devices which combust fuel and transfer heat from the combustion gases to a heat transfer medium across a physical barrier which prevents direct contact or intermixing of the combustion gases and the heat transfer medium are considered steam generating units under Subparts Db and Dc. Devices which either (1) combust fuel but do not transfer heat from the combustion gases to a heat transfer medium or (2) transfer heat to a heat transfer medium by direct contact or intermixing of the combustion gases and the heat transfer medium are not considered steam generating units under Subparts Db and Dc. Process dryers and kilns fall into this latter category and, as a result, Subparts Db and Dc do not apply to these types of combustion devices.

This response has been coordinated with the Office of General Counsel and the Stationary Source Compliance Division. If you have any questions, please call Rick Copland at (919) 541-5265.

Addressees:

Linda Murphy, Director
Air Management Division
Region I

Conrad Simon, Director
Air and Waste Management Division
Region II

Thomas Maslany, Director
Air, Radiation and Toxics Division
Region III

ATTACHMENT D
BACT Analysis

ATTACHMENT D
CONTROL TECHNOLOGY REVIEW
HOSFORD, FL ORIENTED STRANDBOARD FACILITY

D.1 INTRODUCTION

The control technology review requirements of the federal and State PSD regulations require that all applicable federal and State emission-limiting standards be met, and that Best Available Control Technology (BACT) be applied to control emissions from the source. The BACT requirements are applicable to all regulated pollutants for which the increase in emissions from the facility or modification exceeds the significant emission rate. The State of Florida has adopted 40 CFR 52.21 by reference (Florida Administrative Code 62-212.400(5)(c)).

BACT is defined in 40 CFR 52.21(b)(12) as:

> *"...An emissions limitation (including a visible emission standard), based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source...which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable...".*

The requirements for BACT were promulgated within the framework of the PSD program in the 1977 Amendments to the Clean Air Act [Public Law 95-95; Part C, Section 165(a)(4)]. The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality (US EPA, 1978; 1980). Guidelines for the evaluation of BACT can be found in EPA's Guidelines for Determining Best Available Control Technology (BACT) (US EPA, 1978) and in the PSD Workshop Manual (US EPA, 1990). These guidelines were drafted by US EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area of the country may not be identical to BACT in another area. According to US EPA (1980):

> BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis.

The BACT requirements are intended to ensure that the control systems incorporated in the design of a proposed facility reflect the latest in control technologies used in a particular industry and take into consideration existing and future air quality in the vicinity of the proposed facility. BACT must, as a minimum, demonstrate compliance with New Source Performance Standards (NSPS) for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost-benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis requires the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgment, balancing environmental benefits with energy, economic, and other impacts (US EPA, 1978).

Historically, a bottom-up approach, consistent with the BACT Guidelines and PSD Workshop Manual, has been used. With this approach, an initial control level, which is usually NSPS, is evaluated against successively more stringent controls until a BACT level is selected. However, US EPA developed a concern that the bottom-up approach was not providing the level of BACT decisions originally intended. As a result, in December 1987, the US EPA Assistant Administrator for Air and Radiation mandated changes in the implementation of the PSD program, including the adoption of a new "top-down" approach to BACT decision-making.

The top-down BACT approach essentially starts with the most stringent (or top) technology and emissions limits that have been applied elsewhere to the same, or a similar, source category. The applicant must next provide a basis for rejecting this technology in favor of the next most stringent technology or propose to use the more stringent technology. Rejection of control alternatives may be based on technical or economic infeasibility. Such decisions are made on the basis of physical differences (*e.g.,* fuel type), locational differences (*e.g.,* availability of water), or significant differences that may exist in the environmental, economic, or energy impacts. The differences between the proposed facility and the facility on which the control technique was applied previously must be justified. Several years ago, EPA issued a draft guidance document on the top-down approach entitled Top-Down Best Available Control Technology Guidance Document (US EPA, 1990). However, to date, US EPA has not promulgated the top-down approach for determining BACT.

D.2 PROCESS DESCRIPTION

Logs, resin, and wax are the primary raw materials used in OSB panel production. The production process will be comprised of four principal manufacturing processes: (1) Furnish production, which includes debarking, slashing, and flaking; (2) Flake drying; (3) Forming and pressing; and (4) Finishing, which includes sawing and sanding.

The various processes are described below in more detail.

D.2.1 Furnish Production

Logs will be unloaded and temporarily stored in the log yard. The logs will then be cut to size, debarked, and processed into flakes. Bark from the debarkers and other green end material from the log yard will be shipped off-site for use as wood fuel or for use in horticultural applications.

D.2.2 Flake Drying

The drying process will consist of five (5) flake dryers (horizontal, cylindrical rotary drum-type) heated by suspension-type burners, and a pneumatic system that conveys the flakes through the dryers. The suspension burners will be designed to burn ground wood fuel. Raw wood fuel will first be ground in the hammermill and then stored in a metering bin. From the metering bin, the ground wood fuel will be pneumatically transferred and blown into the burner. Maximum heat input to each dryer is 40 million British thermal units per hour (MMBtu/hr). The wood fuel will be introduced tangentially to the burners, creating a cyclonic flow pattern, thereby promoting combustion efficiency. The flue gases leaving the combustion zone will be at approximately 1600 degrees Fahrenheit (°F), but will be immediately cooled down to between 600 and 1200 degrees Fahrenheit by the addition of dilution air between the burner and the dryer. The hot exhaust from the burners combines with ambient air pulled through by the dryer's pneumatic system to dry the flakes. The amount of dilution air, and resulting gas temperature, are dependent on the dryer operating rate, wood moisture content, desired moisture content of the furnish, etc. Air pollutant emissions associated with the drying operation will include products of wood fuel combustion, such as PM, VOCs, CO, NO_x, and SO_2. They will also include additional PM, VOC, CO, and formaldehyde, which are produced in the wood drying process.

D.2.3 Forming and Pressing

The dried wood flakes will be blended with resin and wax, and will then be placed as a mat on the forming line in layers oriented at right angles to provide structural integrity. The mat will then be moved into the thermal-oil-heated press, where it will be compressed and heated to bond the resin to the flakes. The thermal oil will be heated to the appropriate temperature in a separate system, consisting of two, wood fuel, suspension burners. Air pollutant emissions associated with the board press operation include PM, VOCs, CO, NO_x and formaldehyde. In contrast, air pollutant emissions associated with the thermal oil heating operation include products of wood and natural gas combustion (*i.e.,* PM, VOCs, CO, NO_x). The thermal oil heating operation is designed to exhaust into an ESP and then into the control system for the flake dryers.

D.2.4 Finishing

The pressed mats will be cut to size, cooled, and the edges will be sprayed with sealant to prevent swelling. The finished OSB will then be packed and shipped off-site. Dry end material will either be burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Numerous material handling operations, which represent both point sources and fugitive emission sources, will be associated with the production of the OSB. Those operations that can be characterized as point sources include the screen fines with saw trim transfer pneumatics, saw trim and finishing line pneumatics, materials reject and flying saw pneumatics, specialty saw and sander pneumatics, fuel system pneumatics, forming bin pneumatics, and hammermill system pneumatics. The pollutant emissions from these operations are limited to PM. The material handling operations responsible for fugitive emissions include the hog fuel truck dump, screen and storage equipment; the sawdust truck dump, screen and storage equipment and face reclaim hoppers; the chip truck dump, screen and storage equipment; and the core reclaim hoppers. PM is the only pollutant associated with these operations.

Uncontrolled and controlled air pollutant emission rates from the various emission points associated with the categories of processing equipment listed above are summarized in Tables 1 and 2, respectively.

Table D-1. Uncontrolled and Controlled Emissions, from Dryers and Press Georgia-Pacific Corporation OSB Plant, Hosford, Florida

Source	Proposed Control System	PM/PM10			VOC			CO			NOx		
		Uncontrolled (TPY)	Controlled (TPY)	Eff. (%)	Uncontrolled (TPY)	Controlled (TPY)	Eff. (%)	Uncontrolled (TPY)	Controlled (TPY)	Eff. (%)	Uncontrolled (TPY)	Controlled (TPY)	Eff. (%)
Dryers	Multiclones/RTO	4,155.5	187	95.4	6,984.9	349.1	95.0	743.3	185.9	75	330.3	390.4 (a)	NA
Press	Multiclones/RTO	62.6	15.5	75.0	1,103.6	55.18	95.0	160.45	40.4	75.0	59.2	59.2	NA

Source: MEC Company (vendor), 1999
Georgia-Pacific, 2004

Notes:
(a) Controlled emissions from dryers are higher than uncontrolled due to fuel burned in RTO.

Table D-2. Uncontrolled and Controlled PM Emissions, from Materials Handling Sources and Thermal Oil Heater Georgia-Pacific Corporation OSB Plant, Hosford, Florida

Source	Description	Proposed Control System	PM/PM10		
			Uncontrolled (TPY)	Controlled (TPY)	Eff. (%)
Materials Handling					
EU-003	Screen Fines With Saw Trim Transfer Pneumatics	Bagfilters	29,041	11.4	99.96 [1]
EU-004	Saw Trim And Finishing Line Pneumatics	Bagfilters	6,203	5.88	99.9
EU-005	Materials Reject/Flying Saw Pneumatics	Bagfilters	6,548	10	99.9
EU-006	Specialty Saw/Sander Pneumatics	Bagfilters	23,314	9.7	99.96 [1]
EU-007	Fuel System Pneumatics	Bagfilters	23,314	1.88	99.99
EU-008	Forming Bins Pneumatics	Bagfilters	4,862	8.61	99.9
EU-009	Hammermill System Pneumatics	Bagfilters	145,205	11.6	99.99
EU-010	Thermal Oil Heater	ESP	246.5 [2]	35.0	86

1. Reflects 99.96% control by baghouse and 80% control by cyclone receiver.

2. During wood-firing operations

D.3 APPLICABILITY

PM, VOC, CO and NO_x emissions are subject to PSD review (see Table 5-1 in main body of the report). As a result, sources of these emissions are subject to BACT review. According to the federal PSD regulations, a newly constructed major source must apply BACT for these pollutants for each new emissions unit constructed. As such, the BACT analysis is completed for the dryers, board press, and all material handling sources.

D.4 PROPOSED AIR EMISSION CONTROLS

The following control equipment is proposed as BACT for each equipment type:

1. Dryers - Multiclones followed by Regenerative Thermal Oxidation (RTO).
2. Board Press - RTO.
3. Material Handling Sources - Bagfilters.

These control devices are listed in Tables 1 and 2, along with their respective control efficiencies.

D.5 BACT ANALYSIS FOR DRYERS

D.5.1 Selection of Control Options

Selection of air emission control options for the dryers must consider the high moisture content of the gas stream, the relatively high concentration of fine, organic and inorganic particulate matter and the condensable VOC material present. These considerations limit the control options to those systems that have been either demonstrated in practice (at least on a pilot scale) to be able to operate in the previously described conditions or can be reasonably expected to handle the conditions based on applications with similarly harsh conditions. On this basis, the following control options can be considered to have a practical potential for application to OSB drying:

1. Regenerative thermal oxidation (RTO) with particulate matter control
2. Regenerative catalytic oxidation (RCO) with particulate matter control
3. Biofilter with particulate matter control
4. Recycle system with indirect heat exchange and particulate matter control

5. Wet electrostatic precipitation (wet ESP)

The first four options are capable of controlling VOC, PM and CO emissions. Biofilters are reported to control NO_x emissions as well. The last option is a particulate matter control device with a potential for VOC control as well. Various particulate matter control devices can be identified as having a practical potential for application. These include, in addition to the wet ESP, bagfilters, wet scrubbers, electrostatic filter beds (EFB) and so-called "sacrificial bed filters" developed by a few RTO vendors.

Control of NO_x requires additional equipment for each option other than biofiltration. Selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) are add-on control systems that have a practical potential for application. Combustion control is also an alternative for NO_x control.

Although other options may be considered at this stage of the evaluation, none has the emission reduction potential of those already mentioned. Furthermore, there is sufficient documentation in the recent BACT evaluations issued to support various wood products manufacturing process permitting activities to dismiss them outright. These options include carbon adsorption and chemical scrubbers for VOC control.

Recent BACT determinations for dryers in the OSB industry, as contained on the RACT/BACT/LAER Clearinghouse (RBLC), are presented in Tables D-3 through D-6 for PM, VOCs, NO_x, and CO, respectively.

Table D-3. Summary of Recent PM BACT Determinations for Dryers

Company	State	Permit #	Permit Date	Throughput	Emission Limit (a)	Control Equipment	Efficiency (%)
GEORGIA-PACIFIC CORPORATION	AR	1803-AOP-R2	1/7/2003	600 MMSF/YR	18.82 LB/HR	RTO/MUTICLONES	--
WEYERHAEUSER	MI	525-94B	6/11/2002	108000 LB/H	0.03 GR/DSCF	WET ESP AND RTO.	
POTLATCH CORPORATION	MN	06100010-006	12/4/2000	33000 LB/H	6 LB/HR	WET ESP	95
POTLATCH CORPORATION	MN	06100010-006	12/4/2000	33000 LB/H	6 LB/HR	WET ESP	
GEORGIA PACIFIC CORPORATION	FL	PSD-FL-282	10/13/2000	550216 T	33.8 LB/HR (b)	RTO/MUTICLONES.	95
GEORGIA-PACIFIC CORPORATION	GA	1803-AOP-R1	6/8/1999	475 MMSF/Y	14.9 LB/HR	RTO WITH MULTICLONES AND GOOD COMBUSTION	90
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	4.16 LB/HR	WET ESP IN SERIES WITH RCO	90
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	29.8 LB/HR	WET ESP IN SERIES WITH RCO	90
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	0.015 GR/DSCF	WET ESP/RTO	0
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/H	8.42 LB/HR	EFB, RTO	95
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	16.65 LB/HR	RTO	89.9

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:
(a) Emission limit for each individual dryer, except where noted
(b) Emission limit for all dryers combined
RTO = Regenerative Thermal Oxidizer
RCO = Regenerative Catalytic Oxidizer
ESP = Electrostatic Precipitator
WESP = Wet Electrostatic Precipitator
gr/dscf = grains per dry standard cubic feet

Table D-4. Summary of VOC BACT Determinations for Dryers

Company	State	Permit #	Permit Date	Throughput	Emission Limit (a)	Control Equipment	Efficiency (%)
GEORGIA-PACIFIC	AR	1803-AOP-R2	1/7/2003	600 MMSF/YR	31.9 LB/HR	RTO/MULTICLONES	90
WEYERHAEUSER	MI	525-94B	6/11/2002	108000 LB/H	18.6 LB/HR	RTO	
POTLATCH CORPORATION	MN	06100010-006	12/4/2000	33000 LB/H	8 LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)	
GEORGIA PACIFIC	FL	PSD-FL-282	10/13/2000	550216 T	63.1 LB/HR (b)	REGENERATIVE THERMAL OXIDIZERS	90+
GEORGIA-PACIFIC	AR	1803-AOP-R1	6/8/1999	475 MMSF/YR	22.25 LB/HR	RTO WITH MULTICLONES AND GOOD COMBUSTION	90
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	28.9 LB/HR	REGENERATIVE CATALYTIC OXIDIZER	90
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	39.5 LB/HR	REGENERATIVE CATALYTIC OXIDIZER	90
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	31.6 LB/HR	RTO	95
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/H	3.67 LB/HR	WOOD SPECIE, RTO	95
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	44 LB/HR	REGENERATIVE THERMAL OXIDATION SYSTEM	99.3
J.M. HUBER CORPORATION	VA	30905	01/05/94	7,920 HR/YR	27.4 lb/hr	WESP and RTO	94

Source: EPA's RACT/BACT/LAER
Clearinghouse, 2004

Notes:

(a) Emission limit for each individual dryer, except where noted

(b) Emission limit for all dryers combined

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

Table D-5. Summary of NOx BACT Determinations for Dryers

COMPANY	STATE	PERMIT #	PERMIT DATE	THROUGHPUT	EMISSION LIMIT (a)	CTRLDESC	PCTEFFIC
GEORGIA-PACIFIC	AR	1803-AOP-R2	1/7/2003	600 MMSF/YR	14.66 LB/HR	LOW NOX BURNER	
WEYERHAEUSER	MI	525-94B	6/11/2002	108000 LB/H	27.8 PPMDV	LOW EXCESS-AIR FIRING	
POTLATCH CORPORATION	MN	06100010-006	12/4/2000	33000 LB/H	8.25 LB/HR		
GEORGIA PACIFIC	FL	PSD-FL-282	10/13/2000	550216 T	60 LB/HR	LOW NOX BURNERS	
GEORGIA-PACIFIC	AR	1803-AOP-R1	6/8/1999	475 MMSF/YR	14.66 LB/HR	LOW NOX BURNERS, FUEL ENHANCEMENT	
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	61.8 LB/HR (b)	SCR AS AN INTEGRAL PART OF THE RCO	50
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	45.8 LB/HR	GOOD COMBUSTION CONTROL	0
WEYERHAEUSER COMPANY	MI	535-94	11/14/1995	--	104 PPMDV	N/A	0
POTLATCH CORPORATION	MN	13700083-007	1/17/1995	30 T/H FLAKES	45.8 LB.HR	GOOD COMBUSTION PRACTICES, INCLUDING PROPER MAINTENANCE AND LIMITING EXCESS AIR.	0
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/HR	18.38 LB/HR	GOOD COMBUSTION, LOW NOX TECHNOLOGY IN RTO	0
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	67.74 LB/HR	LOW NOX BURNERS	0

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:

(a) Emission limit for each individual dryer, except where noted
(b) Emission limit for all dryers combined

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

Table D-6. Summary of CO BACT Determinations for Dryers

COMPANY	STATE	PERMIT #	PERMIT DATE	THROUGHPUT	EMISSION LIMIT (a)	CONTROL EQUIPMENT	EFFICIENCY %
GEORGIA-PACIFIC	AR	1803-AOP-R2	1/7/2003	600 MMSF/YR	52 LB/HR	RTO/MULTICLONES	40
WEYERHAEUSER	MI	525-94B	6/11/2002	108000 LB/H	290 PPMDV	RTO	--
POTLATCH CORPORATION	MN	06100010-006	12/4/2000	33000 LB/H	5.88 LB/HR	RTO	--
GEORGIA PACIFIC	FL	PSD-FL-282	10/13/2000	550216 T	33.6 LB/HR (b)	RTO	75
GEORGIA-PACIFIC	AR	1803-AOP-R1	6/8/1999	475 MMSF/YR	6.72 LB/HR	RTO WITH MULTICLONES	75
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	74.8 LB/HR	RCO	70
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	56.2 LB/HR	RCO	70
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	35.7 LB/HR	GOOD COMBUSTION CONTROL	0
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	285 LB/HR	RTO	70
WEYERHAEUSER COMPANY	MI	535-94	11/14/1995		804 PPMDV	RCO	70
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/H	15.1 LB/HR	GOOD COMBUSTION, RTO	90
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	0	156.28 LB/HR		58.4
J.M. HUBER CORPORATION	VA	30905	01/05/94	7,920 hr/yr	15.47 lb/hr	WESP and RTO	91.7

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:

(a) Emission limit for each individual dryer, except where noted
(b) Emission limit for all dryers combined

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

D.5.2 Elimination of Technically Infeasible Options

Of the control options identified, only two can be eliminated on the grounds of being technically infeasible: SCR and SNCR.

Selective catalytic reduction (SCR) for NO_x control is infeasible due to the inability to locate the equipment at a point in the process where the required temperature range is present (600-800°F). A system has been proposed for a full scale application on a particleboard plant in North Carolina. GP contacted North Carolina Department of Environment and Natural Resources in June 2004. Donald VanDerVaart of the permitting section explained that the SCR option was not constructed into the RCO design due to technical issues.

SNCR technology for NO_x control has developed considerably since its inception in the early 70's. Both ammonia and urea based systems rely on a complex series of chemical reactions to reduce NO_x into molecular nitrogen (N_2). The effectiveness of the technology is highly dependent on a number of factors, the most critical being temperature, residence time and the initial NO_x concentration. SNCR requires gas temperatures in the range of 1,600 to 2,000°F for an adequate residence time. The proposed OSB facility under construction in Broken Bow, OK will apply this technology. However, the Broken Bow facility design uses two-135 MMBtu/hr furnaces to dryer wood strands and heat the process oil for the press. The Broken Bow furnaces operate with a grate-like design with a significant residence time for combustion gases to be treated with SNCR (PSD determination included in the Appendix). The particular wood combustion process chosen as the heat source for the new drying system at Hosford cannot accommodate either ammonia or a urea based SNCR system. The temperature of the gasses leaving the combustion chamber will be approximately 1,600°F. However, once combustion is complete and the gasses leave the combustion chamber they are rapidly reduced in temperature to accommodate the drying process. The gas temperature is reduced to between 600 and 1,200°F by adding dilution air. The anticipated residence time of less than 1 second is too short to obtain any reasonable reduction in NO_x emissions. Therefore, this option is not technically feasible.

Another example of a high temperature oxidation control device is dryer exhaust recycle, which represents an example of a process change that eliminates the need for end-of-the-pipe control of organics. The system is based on proven components and has a control efficiency similar to that of an RTO. However, the high temperature heat exchanger necessary to transfer heat from the heat source to the ambient air used to dry the wood requires costly materials of construction. In addition, a significantly greater amount of wood fuel has to be burned to completely oxidize all of the organic material in the high volume dryer exhaust that is, in fact, used as combustion air. Since the Plant is designed to burn wood fuel, there is no excess availability. For these reasons, exhaust gas recycle is not considered further.

As previously mentioned, so-called "sacrificial bed" pre-filters are being developed by several RTO vendors. Pilot scale studies have been conducted on wood dryers. In addition, Georgia-Pacific has operated a full-scale unit at its medium density fiberboard facility in Monticello, Georgia for the past two years. There have been numerous problems with the system and required maintenance is costly, in terms of both personnel and components.

Bagfilters and dry ESPs, it should be noted, are only feasible where the condensable VOC has been eliminated. This requirement limits their application to downstream of the VOC control device.

Although other control options have not been eliminated, it is important to consider the lack of long-term operating experience with most of the options evaluated.

D.5.3 Ranking of Control Options

This part of the evaluation is performed by ranking the various control options not eliminated in the previous step. Each remaining option is discussed in detail below and a hierarchy of control effectiveness is established.

<u>RTO</u>

RTO represents a general class of control devices that rely on high temperature oxidation of organic material. It is unique because of the high degree of thermal efficiency that is possible by alternately passing hot and cool gas through a fixed bed of ceramic material. As with other thermal oxidation devices, it incorporates a high temperature combustion chamber to ensure complete oxidation of organics. Due to the high volumes of air that must be treated and the very low concentration of organic material (in terms of fuel value), other less energy efficient incineration methods would clearly not be cost effective.

The ceramic media responsible for the high energy efficiency in the RTO poses significant operational problems in a wood dryer application since the dryer exhaust contains a substantial amount of particulate matter and condensable organics. Under these conditions, there is a great potential for plugging of the media bed. For this reason, RTO vendors universally recommend a high degree of precleaning, often through the addition of multiclones, before the gas stream is allowed to reach the RTO.

Experience from several full scale units that have been operating for close to a year indicates that the problem is serious, and in addition to the gradual build up of material on the ceramic media, a glazing phenomenon has occurred whereby ash remaining on the media has fused, and in some cases, broken down the media. The problem is more severe in applications without highly efficient particulate matter control. Higher than normal amounts of potassium and sodium salts in the inorganic fraction of the particulate matter are thought to be the cause since these salts can significantly lower ash fusion temperature. More operational experience is needed to determine the length of time before the bed has to be replaced and whether or not periodic replacement of the portion of the bed most seriously affected will prolong the total bed life. Nevertheless, it is recognized that the initial estimates of going up to three years or more before replacement is now shortened considerably.

Hosford will employ cyclones to capture wood material and fine dust prior to the RTO, in order to reduce the PM loading to the RTO to an acceptable level. RTO with multiclones have been demonstrated to control VOC, CO, and particulate matter. Based on current BACT determinations, the anticipated degree of control for the various pollutants is as follows: VOC - 95%, particulate matter - 90%, and CO - 75%.

Emissions of NO_x are increased in the RTO due to the combustion of natural gas as a supplemental fuel. Georgia-Pacific plans to utilize a low-NO_x burner design. In addition, fuel enhancement will be employed for the natural gas. Fuel enhancement involves the injection of natural gas directly into the inlet pipe to the RTO, which simulates an enriched fuel value gas stream. A vendor guarantee of less than a 10 part per million by volume (ppmv) increase in NO_x forms the basis for this evaluation. Beyond this guarantee, credit is not taken for the burner design or the fuel enhancement.

Entries in the RBLC for carbon monoxide (see Table 6) indicate that one plant can achieve a removal efficiency with an RTO of 91.7%. However, further discussions with the permittee (JM Huber Corporation) reveal that the reported efficiency is an estimate based on using a controlled mass emission rate from the RTO vendor and an estimated uncontrolled mass emission rate. JM Huber used stack testing from another OSB facility to estimate the uncontrolled emission rate. Because the basis for the controlled and uncontrolled emission rates are not consistent, G-P believes that the stated CO removal efficiency is misleading for this technology. In fact, in subsequent BACT determinations for JM Huber OSB plants with RTOs for the dryers, the reported CO removal efficiency is 70%.

Other BACT determinations show efficiencies of 58.4, 70%, and 75%. The proposed 75% control rate for Hosford seeks to maximize carbon monoxide destruction, while minimizing the formation of nitrogen oxides. The high CO efficiency listed in the RBLC can only be achieved with very high operating temperatures, which also lead to an increase in the formation of nitrogen oxides. Thus, one pollutant is heavily controlled at the expense of the other. In addition, abnormally high operating temperatures can lead to operational problems, such as deterioration of the bed and erosion of the insulation. As such, the proposed 75% control for carbon monoxide seeks to balance all of these effects.

RCO

RCO, preceded by multiclones for PM removal, also represents a general class of control devices that relies on high temperature oxidation of organics. However, the presence of a catalyst allows the oxidation reaction to occur at much lower temperature (600-900°F) than RTO. The general operation of the RCO is similar to an RTO and operational problems applicable to RTO are also applicable to RCO. Catalyst deactivation due to blinding of the catalyst part of the media bed is a more serious problem with an RCO since the control effectiveness would be adversely effected. An advantage of the RCO is that energy costs associated with its operation should be significantly less than an RTO system as a result of the lower operating temperatures.

The degree of control possible with an RCO system approach that of an RTO. Since an RTO operating in the gas injection mode operates well below the temperatures where thermal NO_x is a problem, an RCO should not be any more effective in controlling the amount of additional NO_x created. For the purposes of this evaluation, the control effectiveness for CO emissions is considered equal to that of an RTO (75%) and based on current BACT determinations the control effectiveness of PM and VOC is estimated at 80% and 95%, respectively. Emissions of NO_x are increased in an RCO due to the combustion of supplemental fuel.

ESP

ESPs (including EFBs), which rely on the electrostatic charging potential of pollutants in the gas stream, have been proven on a wide variety of sources, including wood-fired combustion sources. Their application to wood dryer exhaust gas streams necessitates gas stream saturation equipment and wet electrode cleaning due to the sticky nature of the particulate matter. This has increased the operational complexity considerably and has added the additional complication of an extensive wastewater treatment requirement. Corrosion of internal metal surfaces can be reduced with stainless steel, but this issue is still a concern.

The degree of particulate matter control possible is very high. Wet ESPs have been employed on wood dryer exhaust gas streams in several commercial scale applications. They are very efficient on filterable particulate matter as measured by US EPA Reference Method 5. However, when total filterable and condensable particulate matter control efficiency is evaluated, the overall control efficiency drops to about 80%.

Since wet ESPs also cool the exhaust and allow some VOCs to condense and be captured, some VOC control is possible. The degree of VOC control has been measured using both US EPA Reference Methods 25 and 25A and the results have varied considerably. At least some of this variability is due to problems with the VOC test methods. For this evaluation, the degree of VOC control possible for wet ESPs is assumed to be 5%.

Wet Scrubber

There are a very wide variety of control devices in this classification. For the most part, they rely on inertial impaction between the scrubbing media (usually water) and the pollutants in the gas stream. As with wet ESPs, the wastewater consideration is the major concern. A relatively clean scrubbing media is required, and for dirty gas streams this usually requires a large quantity blowdown and clean water replacement. Where strict limitations apply, or even prohibitions on water use exist, as is the case in the wood products manufacturing industry, extensive wastewater treatment is needed. A highly efficient capture device for the media droplets formed when the gas mixes with the scrubbing media is also necessary. Wet Scrubbers are usually ruled out for consideration for this reason. However, a system such as that represented by the Dynawave® scrubber can operate with much higher solids loadings, with a significant reduction in the amount of wastewater to be handled.

The only pollutant considered for control with wet scrubber technology is particulate matter. The degree of control possible is very high for gas streams without a large fraction of submicron sized particles. However, dryer exhaust gas contains a significant percentage of very small inorganic and organic particulate matter. For this reason, this device is assigned a control efficiency of 80%. It is possible that some amount of VOC control (5%) will be accomplished with wet scrubber technology since it is capable of cooling the gas stream enough to allow some VOCs to condense and form aerosols that can then be captured.

Biofiltration

In order of decreasing effectiveness, the various control options are combined and ranked as follows:

Control Option	*Degree of Control (%)*		
	PM	*CO*	*VOC*
RTO/Multiclones	*90*	*75*	*95*
RCO/Multiclones	*80*	*75*	*95*
Wet ESP	*80*	*NA*	*5*
Wet Scrubbers	*80*	*NA*	*5*
Biofiltration	*0*	*NA*	*80%*

D.5.4 Selection of BACT

Since RTO (with multiclones) represents the highest overall degree of control technologically feasible, it is selected as BACT for PM, CO, and VOC emissions. A low-NOx burner design, combined with fuel enhancement, is proposed as BACT for NO_x. This selection matches the determination of the Arkansas Department of Environmental Quality (ADEQ) for an identical G-P OSB plant permitted in 1999 and the FDEP determination for the original construction permit for Hosford (PSD-FL-282).

D. 6 BACT ANALYSIS FOR BOARD PRESS

D.6.1 Selection of Control Options

Recent BACT determinations for presses in the OSB industry, as contained on the RACT/BACT/LAER Clearinghouse, are presented in Tables 7 through 10 for PM, VOCs, NO_x, and CO, respectively.

As with the board drying operation, selection of control options for the board press pollutant emissions must consider the high moisture content of the gas stream and the condensable VOC material present. There is also a small amount of particulate matter to consider. These considerations limit the control options to those systems that have been either demonstrated in practice (at least on a pilot scale) to be able to operate in the previously described conditions or can be reasonably expected to handle the conditions based on applications with similarly harsh conditions. On this basis, the following control options can be considered to have a practical potential for application to OSB board presses:

1. RTO
2. RCO
3. Biofilter
4. Wet ESP

The first three options are capable of controlling VOCs, PM and CO. The last option is a particulate matter control device with a limited potential for VOC control.

At this point, some assumption regarding the potential for capturing board press emissions and directing them to a control device must be made. The design of the press is such that essentially total enclosure of the operation is possible and therefore capture efficiency can be assumed to be 100%.

Table D-7. Summary of PM BACT Determinations for Presses

COMPANY	STATE	PERMIT #	PERMIT DATE	THROUGHPUT	EMISSION LIMIT	CONTROL EQUIPMENT	EFFICIENCY %
GEORGIA-PACIFIC	AR	1803-AOP-R2	1/7/2003	600 MMSF/YR	3.5 LB/HR	MULTI CLONES, RTO/TCO	75
WEYERHAEUSER	MI	525-94B	6/11/2002	--	0.01 GR/DSCF	BIOLOGICAL AIR FILTER	--
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002	433620 MSF/YR-3/4	0.2673 LB/H	RTO/TCO UNIT.	80
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002	273312 MSF/YR-3/4	0.2673 LB/H	RTO/TCO UNIT.	80
TEMPLE-INLAND	TX	PSD-TX-865	9/28/2001	--	0.62 LB/H	NONE INDICATED	
TEMPLE-INLAND	TX	PSD-TX-865	9/28/2001	--	0.62 LB/H	NONE INDICATED	
LOUISIANA-PACIFIC CORPORATION	LA	PSD-LA-578	12/7/2000	32 MMBTU/H	6.79 LB/H	RTO	95
GEORGIA PACIFIC	FL	PSD-FL-282	10/13/2000	475000 SQF	2.8 LB/H	RTO	75
TEMPLE INLAND	AR	1533-AOP-R1	11/19/1999	--	2.5 LB/H	RTO	90
GEORGIA-PACIFIC	GA	1803-AOP-R1	6/8/1999	475 MMSF/YR	2.83 LB/H	RTO	75
TEMPLE-INLAND	AL	106-0004-X006	3/16/1998	150 MMSF/YR-3/4	3.23 LB/H	RTO	85
LOUISIANA-PACIFIC CORP.	AL	702-0027	10/22/1997	--	0.01 GR/DSCF	RTO	--
TEMPLE-INLAND	GA	2493-097-10734	9/3/1997	--	12.75 LB/H	N/A	--
INTERNATIONAL PAPER CORPORATION	TX	PSD-TX-766M1	3/18/1997	--	8.9 LB/H	PARTIAL ENCLOSURE	--
INTERNATIONAL PAPER CORPORATION	TX	PSD-TX-766M1	3/18/1997	--	8.9 LB/H	PARTIAL ENCLOSURE	--
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	3.29 LB/H	--	0
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	6.9 LB/H	--	0
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	12.1 LB/H	RTO	0
WEYERHAEUSER COMPANY	MI	535-94	11/14/1995	--	0.0012 GR/DSCF	BIOLOGICAL AIR FILTER	95
GEORGIA-PACIFIC	VA	30903	5/18/1994	318300 TON FLAKES/YR	101.86 TPY	MULTICYCLONE AND ESP	0
GEORGIA-PACIFIC	VA	30903	5/18/1994	50000 SQ FT/HR	63.66 TPY	FAN POWERED STACK	0
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/H	0.65 LB/H	RTO	95
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	0.44 LB/H	RTO	74.8
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	16.65 LB/H	RTO	89.9

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

Table D-8. Summary of VOC BACT Determinations for Presses

COMPANY	STATE	PERMIT #	PERMIT DATE	THROUGHPUT	EMISLIMIT	CONTROL EQUIPMENT	EFFICIENCY %
GEORGIA-PACIFIC	GA	1803-AOP-R2	1/7/2003	600 MMSF/YR	25.3 LB/H	RTO/TCO	90
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002	433620 MSF/YR-3/4	6.13 LB/H	TCO.	95
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002	273312 MSF/YR-3/4	2.64 LB/H	RTO/TCO	95
TEMPLE-INLAND	TX	PSD-TX-865	9/28/2001	--	1.55 LB/H	RTO	--
LOUISIANA PACIFIC CORP.	MT	2303-08	8/24/2001	75 MMSF/YR	--	--	--
LOUISIANA-PACIFIC CORPORATION	LA	PSD-LA-578	12/7/2000	32 MMBTU/H	2.17 LB/H	RTO	95
GEORGIA PACIFIC	FL	PSD-FL-282	10/13/2000	475000 SQF	10 LB/H	RTO	--
TEMPLE INLAND	AR	1533-AOP-R1	11/19/1999		3.5 LB/H	RTO	95
GEORGIA-PACIFIC	AR	1803-AOP-R0	6/8/1999	475 MMSF/Y	20.05 LB/H	RTO	90
GEORGIA-PACIFIC	AR	1803-AOP-R1	6/8/1999	475 MMSF/Y	20.05 LB/H	RTO	90
TEMPLE-INLAND	AL	106-0004-X006	3/16/1998	150 MSF/YR-3/4	6.13 LB/H	RTO AND LOW-NOX BURNERS	90
TEMPLE-INLAND	GA	2493-097-10734	9/3/1997	--	36.25 LB/H	N/A	--
INTERNATIONAL PAPER CORPORATION	TX	PSD-TX-766M1	3/18/1997	--	56.3 LB/H	PARTIAL ENCLOSURE	--
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	32.1 LB/H	--	0
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	21.3 LB/H	--	0
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	9.1 LB/H	RTO	95
WEYERHAEUSER COMPANY	MI	535-94	11/14/1995	--	19.5 LB/H	BIOLOGICAL AIR FILTER	90
GEORGIA-PACIFIC	VA	30903	5/18/1994	--	101.86 TPY	MULTICYCLONE AND ESP	0
GEORGIA-PACIFIC	VA	30903	5/18/1994	--	21.22 TPY	FAN POWERED STACK	0
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/H	1.73 LB/H	RTO	95
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	4.74 LB/H	RTO	99.7
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	44 LB/H	RTO	99.3

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

Table D-9. Summary of NOx BACT Determinations for Presses

COMPANY	STATE	PERMIT #	PERMIT DATE	THROUGHPUT	EMISLIMIT	CONTROL EQUIPMENT
GEORGIA-PACIFIC CORPORATION	GA	1803-AOP-R2	1/7/2003	600 MMSF/Y	13.5 LB/H	LOW NOX BURNERS
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002		13.71 LB/H	LOW NOX BURNERS PLUS 95% HEAT RECOVERY.
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002		13.71 LB/H	LOW NOX BURNERS & 95% HEAT RECOVERY.
TEMPLE-INLAND	TX	PSD-TX-865	9/28/2001		3.94 LB/H	NONE INDICATED
LOUISIANA PACIFIC CORP.	MT	2303-08	8/24/2001	75 MMSQF/Y		
LOUISIANA-PACIFIC CORPORATION	LA	PSD-LA-578	12/7/2000	32 MMBTU/H	5.67 LB/H	NONE INDICATED
GEORGIA PACIFIC CORPORATION	FL	PSD-FL-282	10/13/2000	475000 SQF	10.7 LB/H	LOW NOX BURNER IN CONTROL DEVICE
TEMPLE INLAND	AR	1533-AOP-R1	11/19/1999		6 LB/H	LOW NOX BURNERS
GEORGIA-PACIFIC CORPORATION	AR	1803-AOP-R0	6/8/1999	475 MMSF/Y	10.73 LB/H	LOW NOX BURNERS, FUEL ENHANCEMENT
GEORGIA-PACIFIC CORPORATION	AR	1803-AOP-R1	6/8/1999	475 MMSF/Y	10.73 LB/H	LOW NOX BURNERS, FUEL ENHANCEMENT
TEMPLE-INLAND	AL	106-0004-X006	3/16/1998	150 MMSF/Y-3/4	20 PPM	RTO AND LOW NOX BURNERS
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	0	19.2 LB/H	
GEORGIA-PACIFIC CORPORATION	VA	30903	5/18/1994		203.72 TPY	MULTICYCLONE AND ESP
GEORGIA-PACIFIC CORPORATION	VA	30903	5/18/1994		1.27 TPY	FAN POWERED STACK
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	0	12.84 LB/H	LOW NOX BURNERS

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

Table D-10. Summary of CO BACT Determinations for Presses

COMPANY	STATE	PERMIT #	PERMIT DATE	THROUGHPUT	EMISSION LIMIT	CONTROL EQUIPMENT	EFFICIENCY %
GEORGIA-PACIFIC CORPORATION	AR	1803-AOP-R2	1/7/2003	600 MMSF/Y	9.2 LB/H	RTO/TCO	75
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002	--	16.694 LB/H		
KRONOTEX, USA, INC. - BARNWELL	SC	0300-0031	4/8/2002	--	16.694 LB/H		
TEMPLE-INLAND	TX	PSD-TX-865	9/28/2001	--	4.8 LB/H	NONE INDICATED	
LOUISIANA PACIFIC CORP.	MT	2303-08	8/24/2001	75 MMSQF/Y			
LOUISIANA-PACIFIC CORPORATION	LA	PSD-LA-578	12/7/2000	32 MMBTU/H	17.27 LB/H	NONE INDICATED	
GEORGIA PACIFIC CORPORATION	FL	PSD-FL-282	10/13/2000	475 MMSF/Y	7.3 LB/H	RTO	75
TEMPLE INLAND	AR	1533-AOP-R1	11/19/1999	--	12.4 LB/H	GOOD COMBUSTION	0
GEORGIA-PACIFIC CORPORATION	AR	1803-AOP-R0	6/8/1999	475 MMSF/Y	7.25 LB/H	RTO	75
GEORGIA-PACIFIC CORPORATION	AR	1803-AOP-R1	6/8/1999	475 MMSF/Y	7.25 LB/H	RTO	75
TEMPLE-INLAND	AL	106-0004-X006	3/16/1998	150 MMSF/YR-3/4	50 PPM	RTO AND LOW NOX BURNERS	0
WEYERHAEUSER COMPANY	NC	3449R19	2/25/1997	--	2.2 LB/H		0
LOUISIANA PACIFIC CORP.	MI	19-88D	3/1/1996	--	6 LB/H	RTO	70
WEYERHAEUSER COMPANY	MI	535-94	11/14/1995	--	26 PPMDV	BAF	30
GEORGIA-PACIFIC CORPORATION	VA	30903	5/18/1994	318300 TON FLAKES/Y	203.72 TPY	MULTICYCLONE AND ESP	0
GEORGIA-PACIFIC CORPORATION	WI	30903	5/18/1994	50000 SF/HR	29.71 TPY	FAN POWERED STACK	0
LOUISIANA PACIFIC CORP.	WI	92-MWH-099	3/22/1994	21.58 MMBTU/H	8.2 LB/H	RTO	5
LOUISIANA PACIFIC CORP.	AL	702-0027	2/8/1994	--	20.84 LB/H	RTO	74.4

Source: EPA's RACT/BACT/LAER Clearinghouse, 2004

Notes:

RTO = Regenerative Thermal Oxidizer

RCO = Regenerative Catalytic Oxidizer

ESP = Electrostatic Precipitator

WESP = Wet Electrostatic Precipitator

D.6.2 Elimination of Technically Infeasible Options

All of the options identified are considered technically feasible with the qualifications presented in Sections G.6.2 and G.6.3.

D.6.3 Ranking of Control Options

This part of the evaluation is performed by ranking the various control options not eliminated in the previous step. Each remaining option not discussed in the previous section is discussed in detail below and a hierarchy of control effectiveness is established.

Biofilter

Biofilter technology relies on a sustained culture of microorganisms that are able to absorb and biologically degrade air pollutants in a gas stream. The design for controlling board press emissions incorporates some type of media bed to provide a habitat for the microorganisms and a system to distribute gas throughout the bed. If a biodegradable media is employed it has to be replaced when pressure drop through the bed gets too high. Both temperature and humidity must be controlled. The temperature limitation is a concern. However, in a board press application the temperature can be kept below the critical temperature without excessive dilution air.

Biofilter pilot testing has shown that VOCs, CO, particulate matter, and even NO_x can be controlled. Based on information contained in a Weyerhaeuser PSD permit BACT evaluation prepared in July 1994 (not included in RBLC), the degree of control possible is as follows: VOC - 90% and CO - 50%. No information regarding the particulate matter or NO_x control potential is provided in the BACT analysis. A full scale biofilter is starting up at an OSB facility in Broken Bow, OK. The PSD permit for Broken Bow specified a BACT determination of 70% VOC control with a biofilter. A copy of this determination is included in the Appendix.

In order of decreasing effectiveness, the various control options are combined and ranked as follows:

Control Option	*Degree of Control (%)*		
	PM	*CO*	*VOC*
RTO	*75*	*75*	*95*
RCO	*75*	*75*	*90*
Biofilter	*70*	*50*	*90*
Wet ESP	*80*	*NA*	*5*
Wet Scrubber	*80*	*NA*	*5*

For the reasons noted above, for the dryers (see Section D.5.3), an efficiency greater than 75% for carbon monoxide can be achieved, but additional nitrogen oxides will be generated.

D.6.4 Selection of BACT

Since RTO/RCO represents the highest overall degree of control technologically feasible, it is selected as BACT for PM, CO, and VOC emissions. A low-NOx burner design, combined with fuel enhancement, is proposed as BACT for NO_x. This selection matches the determination of the Arkansas DEQ for an identical G-P OSB plant permitted in 1999 and the FDEP determination for the original PSD permit for the Hosford facility (PSD –FL-282).

D.7 BACT ANALYSIS FOR MATERIAL HANDLING SOURCES

D.7.1 Selection of Control Options

Bagfilter-type dust collectors are feasible for controlling emissions from all of the previously described point sources. As discussed elsewhere in this application, G-P used two methodologies in estimating particulate matter emissions for the bag filters. First, emission estimates are made using material throughput rates and a removal efficiency of 99.96 percent. The second methodology utilizes air flow rates and assumes a particulate matter loading of 0.01 grain per dry standard cubic foot (gr/dscf) exiting the baghouses. Both sets of calculations are included in Attachment B. The vendor is only willing to guarantee the higher of the two values for each of the material handling sources. For emission points EP-3, EP-7 and EP-9, the first methodology (material throughput and removal

For emission points EP-3, EP-7 and EP-9, the first methodology (material throughput and removal efficiency) yields the highest estimates. As such, a removal efficiency of 99.96 percent is proposed for the bagfilter on EP-3 and 99.99 percent for the bagfilters on EP-7 and EP-9. For emission points EP-4, EP-5, EP-6, and EP-8, the second methodology (air flow rate and loading) yields the highest estimates. Using these emission estimates, the back-calculated efficiencies are 99.9 (EP-4), 99.9 (EP-5), 99.96 (EP-6), and 99.9 (EP-8) percent, respectively. The common element for all of these, however, is the outlet loading of 0.01or 0.005 gr/dscf.

Other particulate matter control methods, such as wet scrubbers or ESPs, although feasible, are not considered practical for these sources since they could not be any more effective and either create problems such as wastewater disposal (wet scrubbing systems) or are overly complex and energy intensive (ESP). No controls are considered for the hog fuel handling operations since the material handled produces a minimal amount of fugitive particulate matter emissions. The sawdust material handling system includes equipment to minimize the creation of fugitive particulate matter. These material conveying devices will be enclosed and the relatively dry material (sawdust, planer shavings, etc.) will be stored in an enclosed building. Since the proposed methods of particulate matter control are clearly the most effective in terms of the degree of control possible, no further evaluation of controls is warranted.

Appendix 1

Broken Bow, OK PSD Determination (December 2003)

Attachment D
Appendix 1

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **December 29, 2003**

TO: Dawson Lasseter, Chief Engineer, Air Quality Division

THROUGH: Phillip Fielder, P. E., Engineering Manager, Engineering Section

THROUGH: David Schutz, P.E., New Source Permits Section

THROUGH: Peer Review

FROM: Jian Yue, P. E., Engineering Section

SUBJECT: Evaluation of Permit Application No. **2003-099-C**
J. M. Huber Corp
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma
SW 1/4 Sec. 14, T6S, R24E IM
Located 2 miles west of the intersection of Highway 259 and State Highway 3

SECTION I. INTRODUCTION

Huber Engineered Woods, a division of J. M Huber Corporation (Huber), is proposing to construct an oriented strandboard (OSB) mill in Broken Bow, Oklahoma. The mill will have a maximum production rate of 630 million square feet (MMSF) on 3/8" basis per year. The source will be classified as a 40 Code of Federal Regulations (CFR) Part 70 "major source" of emissions for oxides of nitrogen (NO_x), particulate matter (PM/PM_{10}), carbon monoxide (CO), and volatile organic compounds (VOC). The source will also have potential emissions of total hazardous air pollutants (HAPs) greater than 25 tons per year (tpy) and three single HAP emissions (formaldehyde, methanol, and phenol) above 10 tpy. Since the facility will be classified as a "major" source of HAP emissions and the facility is in a source category subject to a Maximum Achievable Control Technology (MACT) under Federal Clean Air Act Section 112(d), the facility will be subject to case-by-case MACT in accordance with MACT regulations (40 CFR Part 63). As of submittal of this application, an applicable MACT standard has not yet been promulgated for the facility operations, therefore, a "case-by-case" MACT (112(g)) determination is required.

The Huber facility will be located in McCurtain County, Oklahoma, which is currently designated as an attainment area for all criteria pollutants.

SECTION II. FACILITY DESCRIPTION

Operating Scenario Description

The base scenario is 8,000 hours per year operation with no emission bypass. The alternate scenario represents the bypassing of emissions during periods of downtime (for routine control-device maintenance) associated with the dryer/heat source operations. Additionally, the alternate scenario represents the bypassing of emissions during periods of precipitator/biofilter downtime (for routine control-device maintenance) associated with the press operation.

Process Description

The proposed OSB mill will manufacture structural panels made from wood wafers, or strands, produced from logs at the plant. The facility plans to use softwood and up to 10 percent hardwood in the manufacturing of OSB. The strands are mixed with resin, methylene diphenyl diisocyanate (MDI) and/or phenol formaldehyde (PF), and formed into a layered mat. The strands in each layer can be aligned perpendicular to adjacent layers to provide superior structural properties to that of randomly oriented strandboard; or they can be aligned in parallel to achieve properties associated with composite strand lumber. The following subsections describe the processes in the OSB plant.

The major activities at the Broken Bow facility will include the following:

- Raw Material Handling
- Strand Production
- Strand Drying
- Blending
- OSB Forming
- Product Finishing
- Heat Source
- Process Storage Tanks
- Particulate Handling
- Fuel Storage

Raw Material Handling
OSB manufacturing consists of a series of operations, which convert whole logs into strands that are then blended with resin and wax (either slack or emulsion wax) and formed into mats. The logs will be delivered to the facility by truck or rail and stored in the wood yard.

Strand Production
From the wood yard, a crane will transfer the logs to one of two debarkers where the bark will be removed. The debarked logs will then be transferred to the strander for processing into strands. The wood waste from the debarker will be collected by conveyors and either transferred to the bark hog and on to a wet fuel bin or to a temporary bark storage pile.

The strands produced will be long, narrow pieces of wood, approximately 3 to 9-inches long, 1.5-inches wide, and range from twenty thousandths to forty thousandths of an inch in thickness. The strands will then be conveyed from the strander to green storage bins.

Strand Drying

The strands will then be sent via conveyor from the green storage bins to either one of two dryers. The facility will have two, single-pass, rotary drum dryers for removing moisture from the strands. The dryers will be dedicated to drying either core or surface material to allow independent adjustment of moisture content. Low moisture content in the strands is necessary to compensate for the moisture gained when the strands are blended with resin.

After drying, the strands will be conveyed from the rotary dryers to one of two product recovery cyclones where the wood strands will be separated from the gas stream. The gas streams from both of the dryers' cyclones will be vented to a wet electrostatic precipitator (WESP) to remove particulate matter and some volatile organic compounds and then to a regenerative thermal oxidizer (RTO) to destroy organic compounds. Each dryer system will have a bypass stack to be used only during dryer, WESP or RTO downtime during routine control device maintenance and/or startup, shutdown or malfunction events, or in the event of other downtime events.

The strands will then be screened to remove fines and for further classification to either core or surface material. The screened strands will be stored in one of three dry bins. Unacceptable grit and fine material will be pneumatically conveyed to the dry fuel bin or the truck-loading bin; or in case of fire, to an emergency by-pass discharge area where the material can either be reclaimed as process material or as fuel for the wood fired heat source.

Blending

The dried strands will be conveyed from the dry storage bins to one of three blenders, where they are mixed under negative pressure with resin, wax, and other additives. Wood fines reclaimed from the screens that are suitable for reclamation to the product will be mixed with wax and resin in a separate fines blender. Wax and resin will be stored in bulk storage containers and tanks and piped directly into the blender.

OSB Forming

From the blender, the strands will be conveyed to distribution conveyors above bulk storage forming bins. From these bins, the resinated strands will be metered out on a continuously moving forming line belt. During this process, the strands will be mechanically oriented in one direction as they fall to the forming belt below. Subsequent forming heads will form distinct layers in which the strands are oriented perpendicular to those in the previous layer.

The edges of the continuous formed mat will be cut by side trim saws and the trimmed material will be conveyed back for recycling into the dry bins. Just prior to the steam pre-heater, the forming line belt can be retracted to allow rejected material to be either conveyed back to the forming process or conveyed out of the process due to its non-conforming nature. The trimmed mat will be conveyed to the continuous hot press. As the mat enters the press, the mat will be pre-conditioned with humidified air by a steam pre-heater. The press will then apply heat and pressure to activate the resin and bond the strands into a solid reconstituted product as it moves through the press. The heat source will provide heat for the press. The final board, as it exits the press, will be cut into master mats by a traveling saw. The pressed boards will then be either stored for a temporary time in a series of board coolers or transferred to work in process storage for further processing, that is dimensional cutting, sanding, packaging and then stored into finished goods for eventual shipment.

The blending, forming, and mat trimming, hot pressing and initial master panel cutting processes operate as an integrated unit. The gases will be captured from the direct points located at the pre-heater, the front entrance into the press, at the exit from the press, along the sides of the press at various points, the entire press length by a series of collection hoods, and from the board cooler. The captured gases from the pre-heater are conveyed to a cyclonic scrubber to separate large particulate matter and then conveyed to the biofilter. The captured gases from the full length press hood will be directly conveyed to the biofilter, and the direct exhaust pickup points along the press and heat tunnel will be conveyed to a wet electrostatic precipitator and then to the biofilter to remove organic compounds.

A bypass stack will be located upstream of the biofilter to provide for bypass of the system when an upset condition occurs due to an emergency, startup, shutdown or malfunction event.

Product Finishing

Depending on the product specifications, the work in progress (WIP) panels will be trimmed to final dimensions, sawed and sanded. In some cases, an edge sealant is applied to the edges of the boards in a paint booth to prevent moisture absorption from occurring. Some products will go through a "branding" operation where a nail-line pattern will be sprayed onto the panels. The final product will be packaged and shipped from the facility.

Heat Source

The heat source will be comprised of two combustion furnaces. Bark and residual wood waste, including sander dust and waste board from the process will be collected and sent to the heat source area as fuel. Other fuels to be utilized by the furnaces include: natural gas, propane, and small amounts of non-hazardous wastes such as waste oils, resin, release agent, wax, edge seal, paper and WESP sludge. Sander dust will be collected and injected into the secondary chamber of the furnace. Ash is collected in a wet bin and shipped offsite for disposal. At the gas exit of the combustion chamber, a convection heat exchanger (Thermal Oil Heater) will transfer heat to thermal fluid for use at the steam generator, the press and wax storage tanks. The convection heat exchanger can be fired separately on natural gas.

Process Storage Tanks

The site will include wax storage tanks, resin storage tanks, resin bulk containers, a resin catalyst storage tank, release agent storage tanks, a release agent mix tank, a release agent recycle tank, a urea storage tank, and a caustic storage tank. Standing and working losses were estimated using EPA's TANKS4.0 Program.

Particulate Handling
Particulate will be collected from various pneumatic conveying systems throughout the mill. The separate systems will be the stranders, screening, forming, saws, sander, fuel, and the fines reclaim silo. Collected material will be pneumatically conveyed to either the Dry Fuel Silo or Sander Dust Silo, where the material will be stored before transfer to the heat source.

Fuel Storage Tanks
The site will include storage tanks for gasoline, diesel, kerosene, and propane.

Bypass Venting
The two main operations at the facility (drying and press operations) each will have emissions occurring during routine maintenance operations associated with the control devices. Based on the maintenance schedule of these two operations at similar OSB facilities, Huber has incorporated a specific amount of "down-time" (bypass venting) of the operations associated with the dryers and press control devices. "Down-time" includes scheduled routine maintenance of the control devices. This "down-time" is also taken into account in the regulations associated with 40 CFR 63 MACT regulations governing these process operations located at an OSB mill. Huber has requested the "down-time" allowed by the MACT for Routine Control Device Maintenance of the RTOs associated with the dryers equal to 3% of the dryer operation time. Huber has requested the "down-time" allowed by the MACT for Routine Control Device Maintenance of the biofilter associated with the press equal to 0.5% of the press operation time. Huber has identified the WESP/RTO bypass vents as EP-DRYER1BYPASS and EP-DRYER2BYPASS and the WESP/biofilter bypass vent as EP-PRESSBYPASS.

SECTION III. EQUIPMENT

Emissions Unit Group No. 1 was designated as the facility as a whole.

EUG 2 - COMBUSTION UNITS				
Emission Unit	**Point**	**EU Name/Model**	**Size**	**Construction**
EU-EG1	EP-EG1	Emergency Generator #1	900-hp	2003
EU-EG2	EP-EG2	Emergency Generator #2	900-hp	2003
EU-FP1	EP-FP1	Fire Pump Engine	500-hp	2003
EU-PV1	EP-PV1	Propane Vaporizer	2.75 MMBTUH	2003
EU-SG1	EP-SG1	Rail Steam Generator	1.05 MMBTUH	2003
EU-AMU1 - 22	EP-AMU1 - 22	Air Make Up Units (22)	16.64 MMBTUH	2003

EU-HEATER1 –7	EP-HEATER1 - 7	Space Heaters (7)	0.7 MMBTUH	2003

EUG 3 - HEAT UNITS (Normal Operation Scenario[1])				
Emission	Point	EU Name/Model	Size(MMBTUH)	Construction Date
EU-HS1	EP-RTO1	Heat Source No. 1	135	2003
EU-DR1		Dryer No. 1	-	2003
EU-HS2		Heat Source No. 2	135	2003
EU-DR2		Dryer No. 2	-	2003

[1] Controlled with a Wet Electrostatic Precipitator and a Regenerative Thermal Oxidizer

EUG 3 - HEAT UNITS (Alternate Scenario: WESP/RTO Bypass)				
Emission	Point	EU Name/Model	Size(MMBTUH)	Construction Date
EU-HS1	EP-DRYER1BYPASS	Heat Source No. 1	135	2003
EU-DR1		Dryer No. 1	-	2003
EU-HS2	EP-DRYER2BYPASS	Heat Source No. 2	135	2003
EU-DR2		Dryer No. 2	-	2003

EUG 4 – PRESS (Normal Operation Scenario[1])				
Emission	Point	EU Name/Model	MaximumThroughputs	Construction
EU-PR1	EP-BFI	Press No. 1	100 MSF/hr OSB 3/8" 630 MMSF/yr OSB 3/8"	2003

[1] Controlled with a WESP, scrubber and a biofilter

EUG 4 – PRESS (Alternate Scenario: WESP/Scrubber/Biofilter Bypass)				
Emission	Point	EU	MaximumThroughputs	Construction
EU-PR1	EP-PRESSBYPASS	Press No. 1	100 MSF/hr OSB 3/8" 630 MMSF/yr OSB 3/8"	2003

EUG 5 - PM SYSTEMS				
Emission	Point	EU Name/Model	Control	Const. Date
EU-SYS9110	EP-FF1	Stranders – System 9110	CD-FF1[1]	2003
EU-SYS9120	EP-FF2	Screening – System 9120	CD-FF2[2]	2003
EU-SYS9130	EP-FF3	Forming – System 9130	CD-FF3[3]	2003
EU-SYS9140	EP-FF4	Saws – System 9140	CD-FF4[4]	2003
EU-SYS9150	EP-FF5	Sander – System 9150	CD-FF5[5]	2003
EU-SYS9195	EP-FF6	Fuel – System 9195	CD-FF6[6]	2003
EU-SYS9190	EP-FF7	Fines Reclaim Silo – System 9190	CD-FF7[7]	2003

[1]Stranders Fabric Filter

[2]Screening Fabric Filter
[3]Forming Fabric Filter
[4]Saws Fabric Filter
[5]Sander Fabric Filter
[6]Fuel Fabric Filter
[7]Fines Reclaim Silo Fabric Filter

EUG 6 - TANKS				
Emission Unit	**Point**	**EU Name**	**Capacity/ Throughputs**	**Const. Date**
EU-GAS1TK	EP-GAS1TK	Gasoline Storage Tank No. 1	500-gal/ 2,000 gal/yr	2003
EU-EG1TK	EP-EG1TK	Emergency Gen. No. 1 Diesel Tank	1,000-gal/ 3,000 gal/yr	2003
EU-EG2TK	EP-EG2TK	Emergency Gen. No. 2 Diesel Tank	1,000-gal/ 3,000 gal/yr	2003
EU-FP1TK	EP-FP1TK	Fire Pump Engine No. 1 Diesel Tank	500-gal/ 1,500 gal/yr	2003
EU-ME1TK	EP-ME1TK	Mobile Equipment Diesel Tank No. 1	1,000-gal 20,000 gal/yr	2003
EU-KER1TK	EP-KER1TK	Kerosene Storage Tank No 1	500-gal/ 2,500 gal/yr	2003
EU-UR1TK	EP-UR1TK	Urea Storage Tank No. 1	10,000 gal/ 127,962 gal/yr	2003
EU-WAX1TK	EP-WAX1TK	Wax Storage Tank No. 1	25,000-gal 1,582,866 gal/yr	2003
EU-WAX2TK	EP-WAX2TK	Wax Storage Tank No. 2	25,000-gal 1,582,866 gal/yr	2003
EU-WAX3TK	EP-WAX3TK	Wax Storage Tank No. 3	25,000-gal 1,582,866 gal/yr	2003
EU-RES1TK	EP-RES1TK	Resin Storage Tank No. 1	25,000-gal/ 4,667,122 gal/yr	2003
EU-RES2TK	EP-RES2TK	Resin Storage Tank No. 2	25,000-gal 4,667,122 gal/yr	2003
EU-RES3TK	EP-RES3TK	Resin Storage Tank No. 3	25,000-gal 4,667,122 gal/yr	2003
EU-RES4TK	EP-RES4TK	Resin Storage Tank No. 4	25,000-gal 4,667,122 gal/yr	2003
EU-RES5TK	EP-RES5TK	Resin Storage Tank No. 5	25,000-gal 4,667,122 gal/yr	2003
EU-RES6TK	EP-RES6TK	Resin Storage Tank No. 6	25,000-gal 4,667,122 gal/yr	2003
EU-RESCAT1TK	EP-RESCAT1TK	Resin Catalyst Storage Tank No. 1	25,000-gal/ 28,633 gal/yr	2003
EU-RA1TK	EP-RA1TK	Release Agent Storage Tank No. 1	25,000-gal/ 175,011 gal/yr	2003
EU-RA2TK	EP-RA2TK	Release Agent Storage Tank No. 2	25,000-gal/ 175,011 gal/yr	2003

EU-CAU1TK	EP-CAU1TK	Caustic Storage Tank No. 1	10,000-gal/ 10,988 gal/yr	2003
EU-RAMIX1TK	EP-RAMIX1TK	Release Agent Mix Tank No. 1	1,000-gal/ 174,650 gal/yr	2003
EU-RAR1TK	EP-RAR1TK	Release Agent Recycle Tank 1	500-gal/ 174,650 gal/yr	2003

EUG 7 - COATING OPERATIONS				
Emission Unit	**Point**	**EU Name/Model**	**Control**	**Const. Date**
EU-PB1	EP-PBFUG	Paint Booth No. 1 Rim Board	Do not exhaust outside the building except for building vents	2003
EU-PB2	EP-PBFUG	Paint Booth No. 2 Sander		2003
EU-PB3	EP-PBFUG	Paint Booth No. 3 Finish/hand		2003
EU-STENFUG	EP-STENFUG	Stenciling Operation Fugitives		2003
EU-GRADEFUG	EP-GRADEFUG	Grade Operation Fugitives		2003
EU-BRANDB1	EP-BRANDB1F	Branding Booth Exhaust	CD-BB1F[1]	2003

[1]Branding Booth No. 1 Filter

SECTION IV. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application and listed in OAC 252:100-8, Appendix I, are listed below. Recordkeeping for activities indicated with "*" is listed in the Specific Conditions.

- * Stationary reciprocating engines burning natural gas, gasoline, aircraft fuels, or diesel fuel which are either used exclusively for emergency power generation or for peaking power service not exceeding 500 hours per year. The two emergency generators are in this category.

- Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). Various space heaters are in this category.

- * 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.

- * 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.

- Gasoline, diesel fuel, aircraft fuel, and fuel oil handling facilities, equipment, and storage tanks except those subject to New Source Performance Standards and standards OAC 252:100-37-15 and 39-41or with a capacity greater than 400 gallons.

- 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.

- Cold degreasing operations utilizing solvents that are denser than air.

- Welding and soldering operations utilizing less than 100 pounds of solder and 53 tons per year of electrodes.

- Torch cutting and welding of under 200,000 tons of steel fabricated per year.
- Hazardous waste and hazardous materials drum staging areas.

- Surface coating and degreasing operations which do not exceed a combined total usage of more than 60 gallons/month of coatings, thinners, clean-up solvents, and degreasing solvents at any one emissions unit.

- * Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant.

SECTION V. EMISSIONS

Huber has identified the following emission discharge points.

SIGNIFICANT DISCHARGE POINTS

Discharge	Point	Height ft	Diameter ft	Temp °F	Velocity (ft/sec)
Regen. Thermal Oxidizer No. 1	EP-RTO1	80	10	240	51.58
Dryer No. 1 Bypass	EP-DRYER1EV	55.6	6.3	293	118.51
Dryer No. 2Bypass	EP-DRYER2EV	55.6	6.3	293	118.51
Biofilter No. 1 Exhaust	EP-BF1	80	8	100	70.07
Press Bypass	EP-PRESSEV	80	8	120	72.57
Strander Fabric Filter Exhaust	EP-FF1	40	2.5	70	61.12
Screening Fabric Filter Exhaust	EP-FF2	43	3.17	70	71.95
Forming Fabric Filter Exhaust	EP-FF3	55	4.17	70	76.23
Saws Fabric Filter Exhaust	EP-FF4	55	4.17	70	67.8
Sander Fabric Filter Exhaust	EP-FF5	55	4.17	70	73.09
Fuel Fabric Filter Exhaust	EP-FF6	64	1.83	70	63.14
Reclaim Silo Fabric Filter Exhaust	EP-FF7	122	1	70	29.71
Fire Pump Engine #1 Exhaust	EP-FP1	12	0.67	1,030	214.86
Emergency Generator #1 Exhaust	EP-EG1	12	0.83	932	153.22
Emergency Generator #2 Exhaust	EP-EG2	12	0.83	932	153.22

Propane Vaporizer #1 Exhaust	EP-PV1	10	0.33	750	88.81
Rail Steam Generator	EP-SG1	42	1	575	9.32
Branding Booth Exhaust	EP-BRANDB1F	72.5	1.33	70	226.35

EUG 2 - COMBUSTION UNITS
Emissions from the fire pump engine and the two emergency generators are based on use of diesel fuel, AP-42 (10/96), Table 3.3-1, and operating hours of 26 hrs/yr. Emissions from the rail steam generator, air make up units, and space heaters are based on use of natural gas, AP-42 (10/96), Table 1.4-1, and operating hours of 8,760 hrs/yr for the steam generator and 5,040 hrs/yr for the air make-up units and heaters. Emissions from the propane vaporizer are based on use of propane fuel, AP-42 (10/96), Table 1.5-1, and operating hours of 720 hrs/yr.

		NO_X		CO		Total PM_{10}		VOC		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
500-hp Fire Pump Engine	EP-FP1	15.5	0.20	3.34	0.04	1.10	0.01	1.26	0.02	1.3	0.01
900-hp Emergency Generator #1	EP-EG1	27.90	0.36	6.01	0.08	1.98	0.03	2.26	0.03	1.85	0.02
900-hp Emergency Generator #2	EP-EG2	27.90	0.36	6.01	0.08	1.98	0.03	2.26	0.03	1.85	0.02
1.05 MMBtu/hr Rail Stm Gen.	EP-SG1	0.10	0.45	0.09	0.38	0.008	0.03	0.06	0.02	0.001	0.003
2.75 MMBtu/hr Propane Vaporizer	EP-PV1	0.42	0.15	0.06	0.02	0.012	0.004	0.009	0.003	0.001	0.0003
16.64 MMBtu/hr Air Make Up Units (22)	EP-AMU1-22	1.63	4.11	1.37	3.45	0.12	0.31	0.12	0.23	0.01	0.02
0.7 MMBtu/hr Space Heaters (7)	EP-HEATER1-7	0.07	0.17	0.06	0.15	0.01	0.01	0.004	0.01	0.0004	0.001
Subtotal		73.52	5.80	16.94	4.20	5.11	0.48	5.89	0.34	5.01	0.074

EUG 3 - HEAT UNITS
Emissions from this group are based on the following emission factors, maximum combined process rate of 70.5 ODT/hr (ODT means oven dried ton), and operating hours of 8,000 hrs/yr.

Emission Units	**Pollutants**	**Emission Factors**		**Sources**
		Normal Operation	**Control Bypassing Scenario**	
Heat Sources/Dryers	Total PM_{10}	15.2 lb/hr	390 lb/hr	Manufacturer's Guarantee
	NOx	58.42 lb/hr	50.88 lb/hr	
	CO	24 lb/hr	165.6 lb/hr	
	VOC as emitted	0.247 lb/ODT	4.94 lb/ODT	
	VOC as propane	1.05 lb/ODT	8.2 lb/ODT	AP-42 (3/02), Table 10.6.1-3

	SO_2	0.0138 lb/ODT	0.0138 lb/ODT	AP-42 (3/02), Table 10.6.1-2

Emissions from Normal Operation

		NO_X		CO		Total PM_{10}		VOC as emitted		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Heat Source No. 1/Dryer No. 1 Heat Source No. 2/Dryer No.2	EP-RTO1	58.42	233.67	24.00	96.00	15.20	60.80	17.40	69.60	0.97	3.20

Emissions considering bypass scenario: bypassing time accounts for 3% of the total operating hours, which results in 240 hrs/yr for bypassing and 7,760 hrs/yr for normal operation.

		NO_X		CO		Total PM_{10}		VOC as Emitted		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Heat Sources (No Bypass)	EP-RTO1	58.42	226.66	24.00	93.13	15.20	58.98	17.4	67.51	0.97	3.8
Heat Sources (Control Bypass)	EP-DRYER1BYPASS EP-DRYER2BYPASS	50.88	6.11	165.6	19.87	390	46.80	347.99	41.76	0.97	0.12
Total		58.42	232.77	165.6	113.00	390	105.78	347.99	109.27	0.97	3.9

EUG 4 – PRESS

Emissions from this group are based on the following emission factors, maximum process rate of 100 MSF/hr 3/8" and 630 MMSF/yr 3/8", maintaining negative pressure and assuming 100% capture efficiency.

Emission Units	Pollutants	Emission Factors	Sources

		Normal Operation	Control Bypassing Scenario	
Press	Total PM_{10}	0.105 lb/MSF 3/8" basis	0.524 lb/MSF 3/8" basis	Avg. uncontrolled PF/MDI
	VOC as emitted	0.3105 lb/MSF 3/8" basis	1.0343 lb/MSF 3/8" basis	Applicant Estimates
	VOC as propane	0.2932 lb/MSF 3/8" basis	0.9677 lb/MSF 3/8" basis	

Emissions from Normal Operation

		Total PM_{10}		VOC	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1	EP-BF1	10.47	32.99	31.05	97.80

Emissions considering bypass scenario: bypassing time accounts for 0.5% of the total press operating hours, which results in 40 hrs/yr for bypassing and 7,960 hrs/yr for normal operation.

		Total PM_{10}		VOC as Emitted	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1 (No Bypass)	EP-BF1	10.47	32.83	31.05	97.31
Press No. 1 (Control Bypass)	EP-PRESSBYPASS	52.37	0.82	103.43	1.63
Total		52.37	33.65	103.43	98.94

EUG 5 - PM SYSTEMS

PM_{10} emissions from this group are based on manufacturer's estimate of 0.01 gr/dscf and applicable flow rates.

		Total PM_{10}	
Emission Unit	**Point**	**lb/hr**	**TPY**
Stranders – System 9110	EP-FF1	1.54	6.17
Screening – System 9120	EP-FF2	2.91	11.66
Forming – System 9130	EP-FF3	5.35	21.38
Saws – System 9140	EP-FF4	4.75	19.02
Sander – System 9150	EP-FF5	5.13	20.50
Fuel – System 9195	EP-FF6	0.86	3.43
Reclaim Silo–Sys. 9190	EP-FF7	0.12	0.48

Subtotal		20.66	82.64

EUG 6 – TANKS

Storage tank VOC emissions were calculated using the EPA program, "TANKS4.0" and the previously listed throughput limits.

		VOC	
Emission Unit	**Point**	**lb/hr**	**TPY**
Mobile Diesel Tank	EP-ME1TK	0.02	<0.01
Fire Pump Diesel Tank	EP-FP1TK	0.01	<0.01
Emer. Gen. 1 Diesel Tank	EP-EG1TK	0.02	<0.01
Emer. Gen. 2 Diesel Tank	EP-EG2TK	0.02	<0.01
Gasoline Tank	EP-GAS1TK	4.23	0.05
Kerosene Tank	EP-KER1TK	0.01	<0.01
Caustic Tank	EP-CAU1TK	0.01	0.01
Urea Tank	EP-UR1TK	2.03	0.02
Resin Tank No. 1	EP-RES1TK		
Resin Tank No. 2	EP-RES2TK	-	<0.01
Resin Tank No. 3	EP-RES3TK		
		VOC	
Emission Unit	**Point**	**lb/hr**	**TPY**
Resin Tank No. 4	EP-RES4TK		
Resin Tank No. 5	EP-RES5TK	-	<0.01
Resin Tank No. 6	EP-RES6TK		
Wax Tank No. 1	EP-WAX1TK		
Wax Tank No. 2	EP-WAX2TK	0.002	<0.01
Wax Tank No. 3	EP-WAX3TK		
Resin Catalyst Tank	EP-RESCAT1TK	0.07	<0.01
Release Agent Tank No. 1	EP-RA1TK	0.31	<0.01
Release Agent Tank No. 2	EP-RA2TK		
Release Agent Mix Tank	EP-RAMIXTK	0.03	<0.01
Release Agent Rec. Tank	EP-RAR1TK	0.01	<0.01
Subtotal		6.76	0.19

EUG 7 - COATING OPERATIONS

Emissions from coating operation are based on continuous operation (8,760 hours/yr) and the following material usage rates and MSDS submitted by the applicant. In addition, PM emissions are calculated for the branding area only since it is the only coating operation that exhausts outside the building. The branding area is equipped with fabric filters with an assumed 90% control efficiency and a 75% transfer efficiency.

Material	**Usage Rate**	**VOC Content**	**PM Content**

	gal/hr	gal/yr	lb/gal	lb/gal
Ethyl Acetate Ink	1.5	5,000	7.4	0.39
Ethyl Acetate Cleaner	1.5	1,000	7.51	0
Black Stamping Ink	1	4,000	0.08	4.62
Blue Edgeseal	11	48,000	0	3.48
Clear Ultraseal	67	290,000	0	3.9
Clear Edgeseal	37	160,000	0.08	3.15
White Stencil Paint	1	2,500	0	5.58

		Total PM_{10}		VOC	
Emission Unit	Point	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Paint Booth No. 1 Rim Board	EP-PBFUG	0.01	0.02	14.29	28.80
Paint Booth No. 2 Sander					
Paint Booth No. 3 Finish/hand					
Stenciling Operation Fugitives	EP-STENFUG				
Grade Operation Fugitives	EP-GRADEFUG				
Branding Booth	EP-BRANDB1F				

FACILITY WIDE AIR EMISSIONS

A. <u>CRITERIA POLLUTANTS</u>

Emission Groups	**NOx**		**CO**		**Total PM_{10}**		**VOC**		**SO_2**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	TPY
EUG 2	73.52	5.81	16.93	4.20	5.21	0.46	5.89	0.34	5.01	0.074
EUG 3*	58.42	233.67	165.6	113	390.00	105.78	347.99	109.27	0.97	3.2
EUG 4*	-	-	-	-	52.37	33.65	103.43	98.94	-	-
EUG 5	-	-	-	-	20.66	82.64	0.53	2.14	-	-
EUG 6	-	-	-	-	-	-	6.76	0.19	-	-
EUG 7	-	-	-	-	0.01	0.02	14.29	28.80	-	-
Total	131.94	239.48	206.53	117.19	468.26	222.55	478.89	239.57	5.98	3.274

*including bypass emissions

B. HAPS/TOXIC AIR POLLUTANTS

Toxic emissions are based on AP-42 (3/02), 10.6-1 and applicable process rates.

Toxic Air Pollutant	CAS No.	Toxicity Category	Emissions		De Minimis Levels		MAAC $\mu g/m^3$
			lb/hr	TPY	lb/hr	TPY	
Acetaldehyde*	75-07-0	B	10.66	5.31	1.1	1.2	3,600
Acetone	67-64-1	Not Subj.	12.16	4.98	N/A	N/A	
Acrolein*	107-02-8	A	5.52	1.54	0.57	0.6	2
Ammonia (conc 20% or greater)	7664-41-7	C	20.34	66.56	5.6	6	1742
Benzene*	71-43-2	A	0.7	0.22	0.57	0.6	32
Cumene*	92-88-8	C	3.86	1.08	5.6	6	24,582
Ethyl Benzene*	100-41-4	C	0.17	0.002	5.6	6	43,427
Formaldehyde*	50-00-0	A	15.74	8.99	0.57	0.57	12
Methanol*	67-56-1	C	58.05	19.99	5.6	6	26,216
Methyl Ethyl Ketone*	78-93-3	C	0.63	0.28	5.6	6	59,000
Methyl Isobutyl Ketone*	108-10-1	C	0.55	0.24	5.6	6	20,486
MTBE*	1634-04-4	B	0.68	0.01	1.1	1.2	2,880
Phenol*	108-95-2	B	3.13	8.03	1.1	1.2	384
Alpha-Pinene	80-56-8	C	233.56	111.54	5.6	6	1671
Beta-Pinene	127-91-3	C	82.24	40.09	5.6	6	NE
Propionaldehyde*	123-38-6	C	0.87	0.38	5.6	6	NE
Styrene*	100-42-5	B	0.01	0.01	1.1	1.2	4,260
Toluene*	108-88-3	C	2.55	0.48	5.6	6	37,668
Xylenes*	1330-20-7	C	1.12	0.31	5.6	6	43,427
3-Carene	13466-78-9	C	4.65	1.3	5.6	6	14,000
Camphene	79-92-5	Not Subj.	4.79	1.34	N/A	N/A	N/A
Limonene	138-86-3	C	9.87	2.76	5.6	6	NE
p-Cymene	99-87-6	C	4.72	1.32	5.6	6	13500
p-Mentha-1,5-diene	99-83-2	Not Subj.	4.44	1.24	N/A	N/A	N/A
MDI*	101-68-8	A	0.48	1.43	0.57	0.6	0.51
Propylene*	115-07-1	Not Subj.	0.0008	0.0000 1	N/A	N/A	N/A
1,3-Butadiene*	106-99-0	A	0.00001	-	0.57	0.6	44
Polycyclic aromatic hydrocarbons*	N/A	A	0.00006	-	0.57	0.6	1

Toxic Air Pollutant	CAS No.	Toxicity Category	Emissions		De Minimis Levels		MAAC $\mu g/m^3$
			lb/hr	TPY	lb/hr	TPY	
Diesel Fuel #2	68334-30-5	B	0.07	0.001	1.1	1.2	2,000
Kerosene	8808-20-6	B	0.01	0.0001	1.1	1.2	2,000
Ammonium nitrate	6484-52-2	C	2.03	0.02	5.6	6	NE
Potassium salt of tall oil fatty acid	61790-44-1	Not Subj.	0.35	0.02	N/A	N/A	N/A
Aliphatic hydrocarbon	64742-61-6	B	0.002	0.0002	1.1	1.2	40
Mineral Oil	6472-46-7	B	0.05	0.11	1.1	1.2	2,000
Sodium Hydroxide	1310-73-2	C	0.004	0.01	5.6	6	200
Polyether Polyol	53637-25-5	C	0.07	0.0007	5.6	6	NE
Ethyl Acetate	141-78-6	C	11.26	13.93	5.6	6	144,164
Ethylene Glycol Monobutyl Ether Acetate	112-07-2	C	5.00	8.33	5.6	6	3,280
Total HAPs				48.30			

*-Hazardous Air Pollutant (HAP), NE: not established , NA: Not applicable

SECTION VI. BEST AVAILABLE CONTROL TECHNOLOGY

Pollutants for which a BACT analysis is required per OAC 252:100-8-5(d)(1)(a) include VOC, NO_X, CO, and PM_{10}. The emission units for which a BACT analysis is required include the OSB continuous press, heat sources/dryers, and pneumatic conveying systems.

The BACT study was conducted using the top down method as outlined in USEPA's October 13, 1989, guidance document, *Transmittal of Background Statement on Top Down Best Available Control Technology* (BACT), issued by John Calcagni, Director, USEPA's Air Quality Management Division. The details of the study were compiled in accordance with the guidance, "Improving New Source Review Implementation," December 1, 1987, from J. Graig Potter USEPA's Assistant Administrator for Air and Radiation, and the accompanying document *Best Available Control Technology Guidance Document, EPA Region 9, April, 1987*. Cost estimates of control equipment was based on the EPA guidance manual "OAQPS Control Cost Manual-Fifth Edition."

VOC BACT Determination

Huber has completed a review of the RACT/BACT/LAER Clearing house (RBLC) in determination of VOC controls for OSB continuous press operations and OSB heat source/dryer operations, with determinations for VOC. The two operations (OSB continuous press and the OSB heat/source/dryer) represent the most concentrated VOC exhaust gas streams at the facility.

<u>OSB Continuous Press operation</u>

VOC control devices for OSB continuous press operations listed in the RBLC review include biofilter, regenerative catalytic oxidation (RCO), and RTO technologies. As identified in the BID, EPA-453/R-01-004, for Plywood and Composite Wood Products (PCWP) MACT, section

2.3.2, Emission Sources and controls at OSB plants, approximately 10% (2 out of 20) of the OSB presses utilize a biofilter to control VOC. Other control devices utilized to control VOC emissions from OSB presses in the US include: fifteen regenerative thermal oxidizers (RTOs), one regenerative catalytic oxidizer (RCO), one thermal catalytic oxidizer (TCO), and one semi-incineration unit. The semi-incineration unit is not specified whether it is associated with OSB continuous presses. Huber considers this control device to be innovative technology and a technically infeasible option.

Cost analyses were performed for the RTO, RCO, and Biofilter control options as listed below.

Control Technology (% Reduction)	Estimated VOC Controlled (TPY)	Estimated Annualized Costs ($)	Cost Effectiveness ($/ton controlled)
WESP/RTO (90%)	293.23	2,870,897	9,791
Scrubber/RCO (90%)	293.23	3,119,555	10,639
WESP/Biofilter (70%)	228.01	808,841	3,547

Biofilters have been identified as having much better characteristics while supporting sustainable development and are beginning to take the place of oxidizers for application on press emissions. Biofilters provide a considerable advantage over RTOs and RCOs because biofilters do not produce NOx and other combustion process emissions. Additionally, the use of biofilters will yield significantly lower energy usage than RTOs and RCOs due to the absence of combustion that is required to maintain high temperatures for oxidation of VOCs.

Huber proposes to install a Biofilter as BACT for controlling VOC from the OSB continuous press since it is the most cost effective of those considered. ODEQ agrees with biofilter as the continuous press BACT for VOC since it is consistent with the Case-By-Case MACT determination.

OSB Heat Source/Dryer

VOC control devices for OSB Heat source/dryer operations listed in the RBLC review include RTOs and RCOs. As identified in the background information document (BID), EPA-453/R-01-004, for PCWP MACT, Section 2.3.2, emission sources and controls at OSB plants, 86% of the OSB rotary dryers utilizes a RTO to control VOC. Other control devices utilized to control VOC emissions from OSB rotary dryers include: RCO (5%) and process incineration (one facility).

Since there was no information available in regards to the process incineration VOC control option for the OSB heat source/dryer operations, Huber considers this control device to be innovative technology until it has been installed and demonstrated to operate on an OSB heat source/dryer operation and is considered a technically infeasible option.

Several control devices using a catalyst with incineration of VOC gas, such as RCO, have been used with OSB heat source/dryer operations. These applications have indicated that the catalyst will become fouled due to the dirty nature of the gas stream. For this reason, the RCO is technically infeasible.

Huber proposes to install a RTO as BACT for VOC for the Heat Sources/Dryers. ODEQ agrees with RTO as Heat Sources/Dryers BACT for VOC since it is consistent with the Case-By-Case MACT determination.

Emergency Diesel Generators, Diesel Fire Pump, Rail Steam Generator, Propane Vaporizer, Air Make Up Units, and Space Heaters

VOC emissions from these units are based on equipment design and is proposed as BACT. A review of the RBLC indicates that this type of equipment has not been required to install additional VOC controls because of intermittent operation and insignificant emissions. The proposed BACT has no adverse environmental or energy impacts. DEQ agrees that equipment design and a limitation on hours of operation is acceptable as BACT.

Coating Operations

Based on the level of VOC emissions from these sources, BACT is accepted as limitations on material usage rates and VOC contents.

NO_X BACT Determination

OSB Heat Source/Dryer

This section discusses the control of NOx emissions from the OSB Heat Source/Dryer operation. A review of the RACT/BACT/LAER Clearinghouse indicated that NOx emission control devices and NOx reducing integrated combustion controls used in similar facilities include: good combustion controls, low excess air firing, and low NOx burners.

The OSB heat source/dryer operations are designed to combust fuel in a manner to reduce the NOx emissions. Specifically, the design of the heat source includes installation of a urea injection system (Selective Non-catalytic Reduction) which will have a manufacturer's guaranteed 55% NOx reduction efficiency. Low NOx burners are not technically feasible in the sense of natural gas fired burners because the furnace is firing a solid material. The heat sources combust primarily wood material on a grate that transports the burning wood from its inlet point to a point where ash drops into an ash conveying system. This grate "burner" is designed to incorporate low NOx technologies in a similar manner to that of a single natural gas burner in that combustion air is added in the primary chamber above the grate at less than the stoichiometric rate and additional air is added in the secondary chamber to provide excess air. This technique is part of the design of the burner and is not a different or separate device such as injecting urea. Huber proposes to install good combustion controls associated with the OSB heat source operation, in addition to installing a urea injection system, which will have a manufacturer's guaranteed 55% NOx reduction efficiency as BACT for NO_X for the Heat Sources/Dryers.

Based on this review, good combustion controls with urea injection is acceptable as BACT.

Emergency Diesel Generators, Diesel Fire Pump, Rail Steam Generator, Propane Vaporizer, Air Make Up Units, and Space Heaters

NOx emissions from these units are based on equipment designs and are proposed as BACT. A review of the RBLC indicates that this type of equipment has not been required to install additional NOx controls because of intermittent operation and insignificant emissions. The proposed BACT has no adverse environmental or energy impacts. DEQ agrees that equipment design and a limitation on hours of operation is acceptable as BACT.

CO BACT Determination

OSB Heat Source/Dryer

Huber has completed a review of the RACT/BACT/LAER Clearinghouse (RBLC) in determination of CO controls for OSB heat source/dryer operations. The search of permits issued in the past 10 years resulted in two permits that addressed CO BACT. Both permits accepted RTO as BACT for CO. According to manufacturer's guarantee, the proposed RTO controls 85% of CO while controlling 95% VOC. RTO is accepted as BACT for CO from the two heat sources.

Emergency Diesel Generators, Diesel Fire Pump, Rail Steam Generator, Propane Vaporizer, Air Make Up Units, and Space Heaters

CO emissions from these units are based on equipment designs and are proposed as BACT. A review of the RBLC indicates that this type of equipment has not been required to install additional CO controls because of intermittent operation and insignificant emissions. The proposed BACT has no adverse environmental or energy impacts. DEQ agrees that equipment design and a limitation on hours of operation is acceptable as BACT.

PM_{10} BACT Determination

OSB Heat Sources/Dryers

A review of the air pollution control devices to remove PM from OSB dryers indicates that approximately 66% of the OSB rotary dryers utilize wet electrostatic precipitator (WESP) to control PM_{10}. Other control devices utilized to control PM_{10} emissions from OSB include: multiclones, rotary bed protectors, baghouses, and dry electrostatic precipitators. The most stringent particulate outlet loading identified is 0.015 gr/dscf for RBLC ID No. MI-0240.

Huber proposes to install a WESP, in addition to a RTO as BACT for PM_{10} from the Heat Sources/Dryers, with a 0.015 gr/dscf PM_{10} outlet loading. This emission rate is equivalent to the most stringent requirements listed in the BACT/LAER database and is acceptable as BACT.

OSB Continuous Press operation

A review of the air pollution control devices to remove PM from OSB presses indicates that approximately 95% of the OSB presses do not have particulate control devices in addition to RTO/RCO, or a biofilter used mainly to control VOCs. RBLC ID No. AR-0059 is the only one that used multiclones in addition to a RTO. The most stringent particulate outlet loading identified is 0.01 gr/dscf for RBLC ID Nos. MI-0353 and AL-0156.

Huber proposes to install a WESP, in addition to a biofilter as BACT for PM_{10} from the Press, with a 0.015 gr/dscf PM_{10} outlet loading. The WESP is equivalent to the most effective PM_{10} control being used. The proposed controls satisfy BACT requirement.

OSB Pneumatic Conveying Systems

Baghouses and fabric filters are listed as PM_{10} control options for OSB pneumatic conveying systems. There are no RBLC listings which demonstrate compliance with a grain/dscf outlet particulate loading for the OSB pneumatic conveying systems.

Huber proposes to install fabric filter baghouses that will have a manufacturer's guaranteed outlet particulate loading of at least 0.01 grain/dscf. Baghouses are the most effective controls available for PM_{10}. The proposed control satisfies BACT requirement.

Emergency Diesel Generators, Diesel Fire Pump, Rail Steam Generator, Propane Vaporizer, Air Make Up Units, and Space Heaters

PM_{10} emissions from these units are based on equipment designs and are proposed as BACT. A review of the RBLC indicates that this type of equipment has not been required to install additional PM_{10} controls because of intermittent operation and insignificant emissions. The proposed BACT has no adverse environmental or energy impacts. DEQ agrees that equipment design and a limitation on hours of operation is acceptable as BACT.

Coating Operations

The branding area is equipped with an overspray filter and is accepted as BACT for PM_{10} control. The other coating operations have insignificant PM_{10} emissions and no add-on control is accepted as BACT for these coating operations.

SECTION VII. AIR QUALITY IMPACTS

For an area which will be affected by emissions from a new major source, an analysis of the air quality impact is required for those pollutants which will be emitted in significant quantities; in this case NOx, CO, PM_{10}, and VOC. The owner or operator must demonstrate that the new source will not cause nor contribute to a violation of the National Ambient Air Quality Standards. Since there is no NAAQ Standard for VOC emissions and VOCs react with NOx to form ground level ozone, impacts from VOC were analyzed as ozone based on procedures outlined in the EPA document "VOC/NOx Point Source Screening Tables" (OAQPS 1988) and guidance contained in the Texas Commission on Environmental Quality air dispersion modeling team technical memorandum: One-Hour Ozone Screening Technique, March 3, 2000. For NOx, CO, and PM_{10}, the latest EPA Industrial Source Complex (ISCST3) dispersion model was used to predict the maximum concentrations for the project emission sources. The ISCST3 was used for both short-term (24-hour) and long-term (annual) averaging periods.

The facility is to be located at Broken Bow. The area in the immediate vicinity of the facility is largely undeveloped. Although a number of small commercial/industrial type sources are located within 3-kilometers of the site, a large percentage of the area is undeveloped and rural in character.

The following model options were used in the application of the ISCST3 model:

1. Regulatory default option was enabled.
2. Calm processing option was enabled.
3. Rural mode was used.
4. Elevated terrain was used for modeling the area around the facility. The terrain elevation was determined to be greater than the site base elevation for various locations within the modeled area.
5. The emission sources were modeled at their actual stack heights. None of these stack heights exceeded the calculated GEP level or 65 meters, whichever is greater.
6. The anemometer height parameter was set to the Shreveport, Louisiana meteorological station height of 10 meters.

The receptor grids consists of:

1. 500-meter spaced receptors to a distance of 5-kilometers of the property boundaries,
2. 100 meter spaced receptors to a distance of 1-kilometer of the property boundaries,
3. 25-meter spaced receptors to a distance of 100-meters of the property boundaries, and
4. 25-meter spaced receptors directly along the property boundaries.

Five years of recent NWS meteorological data (1989 – 1993) were used in this modeling analysis, with surface meteorological data from Shreveport, Louisiana and upper air meteorological data from Longview, Texas.

Background concentration data was supplied by the ODEQ and is listed in the following table.

Pollutant	Averaging Period	Monitored Concentration		NAAQS	
		ppm	µg/m³	ppm	µg/m³
NO_2	Annual	0.007	13.4(1)	0.053	100
PM_{10}	24-Hour	-	45(2)	-	150
	Annual	-	21	-	50
CO	1-Hour	1.6(3)	1,864(1)(3)	35	40,000
	8-Hour	0.5(3)	583(1)(3)	9	10,000
O_3	1-Hour	0.084(4)	168(1)(4)	0.12	235
	8-Hour(5)	-	-	0.08	-

(1) Calculated from ODEQ-supplied concentration
(2) Fourth-highest monitored value
(3) Second-highest monitored value
(4) Fist-highest monitored value at McAlester site, Pittsburg County in 2003
(5) The eight-hour standard has not been implemented. This standard is listed only for reference purposes.

The maximum ozone concentrations associated with the NOx and VOC emissions from the proposed mill were estimated using the Sheffe Screening Table and are listed below. The applicant considered two scenarios: one represents emissions during normal plant operation while the second represented the worst-case emissions during the bypass scenario having the greatest 24-hour VOC emissions. For the worst case 24-hour period, the RTO bypass emissions were modeled for two hours operation and the biofilter bypass emissions were modeled for 24-hour operation. All other VOC emissions at the site were included during this period with 24-hour operation. The calculated ozone concentration plus the background concentration is below the ozone NAAQS even when using the maximum daily VOC emissions associated with bypass operations.

Pollutant	Averaging Period	Operating Scenario	Calculated Concentrations (ppm)	Background Concentration (ppm)	Total Concentrations (ppm)	NAAQS (ppm)
Ozone	1-Hour	Normal Emissions	0.016	0.084	0.10	0.12
		Includes Bypass Emissions	0.022	0.084	0.106	

The proposed facility is outside radii of impact for NOx and PM_{10} from Weyerhaeuser's Valliant and Wright City facilities, therefore PSD minor source increment consumption is not a concern.

The modeling results for NO_2, CO, and PM_{10} are listed in the following table for both normal plant operation and bypass situations. The predicted NO_2, CO, and PM_{10} concentrations plus the background concentrations are below their respective NAAQS for all operating scenarios.

Pollutant	Averaging Period	Operating Scenarios	Predicted Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
NO_2	Annual	Includes Bypass Emissions	2.28	13.4	15.7	100
CO	1-Hour	Normal	328	1,864	2,192	40,000
		RTO Bypass	1,366	1,864	3,230	
	8-Hour	Normal	129	583	712	10,000
		RTO Bypass	139	583	722	
PM_{10}	24-Hour	Normal	74.3	45	119	150
		Biofilter Bypass	76.3	45	121	
		RTO Bypass	86	45	131	
	Annual	Includes Bypass Emissions	12.2	21	33.2	50

SECTION VIII. CASE-BY-CASE MACT

Oklahoma rules (OAC 252:100-8-4(a)(2)) adopt federal regulations (40 CFR Subpart B, Sections 63.40 to 63.44, Requirements for Control Technology for Major Sources of Hazardous Air Pollutants) by reference. Section 63.43 of Subpart B requires that any facility not included in a listed source category (or for which a standard has not been promulgated under Section 112(c) of the CAA prior to May 15, 2002) that constructs or reconstructs a major source of HAPs after June 29, 1998, is subject to a case-by-case MACT determination. For the proposed facility, there are several processes or production units that are subject to a 112(g) MACT determination for the MACT entitled, "Plywood and Composite Wood Products," which was proposed on January 9, 2003, and will be promulgated in the future. The standards as listed in the proposed MACT are acceptable as the case-by-case MACT determination for this facility. The affected source, as defined by the proposed rule, is the collection of sources at a site of manufacturing of plywood and composite wood products that includes:

- Green End Operations including log handling, and storage, debarking, cutting, stranding, and green material storage.

- Drying Operations including two rotary dryers, associated cyclones, and screening.
- Blending and Forming Operations.
- Pressing and Board Cooling Operations including the Press.
- Miscellaneous Finishing Operations including sanding, sawing, patching, edge sealing and other finishing operations not subject to other NESHAP.
- Raw Material Storage including resin and wax tanks.
- Wastewater Treatment Operations specifically associated with PCWP manufacturing.
- Miscellaneous Coating Operations including application of edge seals, moisture sealants, anti-skid coatings, company logos, trademark or grade stamps, nail lines, synthetic patches, wood patches, wood putty, and edge fillers.

To provide compliance flexibility, the MACT defined the affected source as the combination of all of the process units at a PCWP manufacturing facility by first combining emissions from different process units and then controlling the combined emissions in one or more emission control devices.

The proposed PCWP MACT provides three compliance options:

- Production-based compliance options that are based on units of mass of pollutant per unit of production
- Add-on control system compliance options
- Emissions averaging compliance option

The applicant has chosen to use add-on controls, allowing the following six options for demonstrating compliance. These six options are listed in Table 1B of the MACT, with operating requirements for each identified in Table 2. .

1. Reduce THC emissions (as carbon, and minus methane) by 90 percent.
2. Reduce methanol emissions by 90 percent.
3. Reduce formaldehyde emissions by 90 percent.
4. Limit the concentration of THC (as carbon, and minus methane) in the outlet of the add-on control system to 20 ppmvd.
5. Limit the concentration of methanol in the exhaust from the add-on control system to 1 ppmvd.
6. Limit the concentration of formaldehyde in the exhaust from the add-on control system to 1 ppmvd.

The following paragraphs describe the two methods tentatively chosen by the facility. Final selection will be provided by Huber after the required performance test is conducted.

The design of the equipment is not complete at this moment, so specification of which compliance option will be used cannot be made. Huber has tentatively selected methanol as the compound for the press and board cooler and THC (as carbon) for the heat sources/dryers.

In the first three options, the 90 percent control efficiency represents a total control efficiency. Total control efficiency is defined as the product of the capture efficiency and the control device efficiency. For rotary dryers, capture efficiency is not an issue because the rotary strand dryer has a single exhaust point that is easily captured by the control device. However, for presses and board coolers, the HAP emissions cannot be completely captured without installing an enclosure. If the enclosure meets the criteria for a permanent total enclosure (PTE) as described in EPA Test Method 204 (40 CFR part 51, appendix M), then a capture efficiency of 100 percent can be assigned to the enclosure.

For the three concentration options, the MACT requires an enclosure that either design is consistent with that of Method 204 for a PTE or achieves a capture efficiency greater than or equal to 95%.

On March 10, 2003, Huber submitted comments on the proposed PCWP MACT to EPA, regarding concerns on enclosure requirements. The comments stated that requiring a PTE for a continuous press presents operational, safety, and financial obstacles that do not similarly exist for batch presses.

1. Operational Concerns
   The Norbord facility in South Carolina experienced numerous problems due to excessive heat inside its enclosure during normal operations. The excessive heat causes mechanical and electrical failures. An enclosure would impede visibility and prevent operators from observing and maintaining equipment on the press. Enclosing the press will also require extracting large amounts of air from the PTE. This may lead to an imbalance in the application of heat along the press, which would impact the tracking of the steel belts and could impact the quality of the product. Additionally, the large amounts of air necessary to feed the system will necessarily be cooler than the air inside the PTE, which will lead to stress on the equipment due to temperature differences.
2. Safety Concerns
   Because the press requires a high volume of lubrication fluids, the build-up of heat due to an enclosure presents a substantial fire risk. In addition, an enclosure is also likely to lead to unhealthy levels of HAPs and an excessively hot work environment within the PTE.
3. Financial Concerns
   Due to the great size of continuous presses and the related emissions patterns, a PTE over a 200 ft long area will essentially require construction of a mini-building to house the continuous press which increases initial capital cost.

Based on concerns discussed above, Huber proposes to maintain a negative pressure with a design consistent with Method 204 and enlist work practices to ensure the closing of man doors, windows, bay doors, etc. when used for access purposes, at all times during operation, except during short periods of personnel egress/ingress from the building; thus assuming 100% capture efficiency on the building that houses the press, capturing decompression gases from the product produced in the press via a press length hood.

In summary, MACT is accepted as follows:

a. For the Rotary Dryers, install and operate one of the add-on control systems defined in Table 1B of the proposed 40 CFR 40 Subpart DDDD. The exhaust gases from these dryers will pass through one of two wet electrostatic precipitators (WESP) before going to a regenerative thermal oxidizer (RTO).
b. For the Continuous Press, install and operate one of the add-on control systems defined in Table 1B of the proposed 40 CFR 63 Subpart DDDD and maintain a negative pressure within the building housing the press while capturing decompression gases from the product produced in the press via a press length hood and multiple direct exhaust extraction points located at various locations at the continuous press infeed and outfeed, without the requirement to demonstrate that the building meets the Permanent Total Enclosure criteria or measure the capture efficiency. DEQ agrees that capturing gases from a press length hood and maintaining a negative pressure within the press building will result in a capture efficiency that is assumed to be 100% and equal to that of a Permanent Total Enclosure of the press. The specific conditions will require that the continuous press be operated only when a negative pressure is maintained within the press building. The press room gases and exhaust gases captured directly from the press will be conveyed to a wet electrostatic precipitator, a scrubber and then to a biofilter.
c. For the Board Cooler, maintain a negative pressure on the board cooler enclosure without the requirement to demonstrate that the enclosure meets the Permanent Total Enclosure criteria, capture gases from the board cooler, convey them to the press building, capture all gases in the press building and convey them to an add-on control device as discussed for the continuous press above. DEQ agrees that maintaining a negative pressure within the board cooler enclosure will result in a capture efficiency that is assumed to be 100% and equal to that of a Permanent Total Enclosure of the press. The specific conditions will require that the board cooler is operated only when a negative pressure is maintained within the board cooler enclosure, and that gases from the board cooler are conveyed to the continuous press building, where all gases from operations in the press building and those from operations in the board cooler enclosure are conveyed to an add-on control device, as discussed in the section on the continuous press.

The proposed PCWP MACT also sets the following operating requirements for add-on controls.

1. RTO
   - Maintain the firebox temperature at a level that is greater than or equal to the minimum temperature established during the performance test.
   - Maintain the average static pressure at the inlet of the RTO within the operating range established during the performance test.
   - As an alternative to monitoring static pressure, the applicant may choose to monitor gas flow rate at the RTO stack and must maintain the gas flow rate below the maximum flow rate established during the performance test.
2. Biofilter
   - maintain the temperature of the air stream entering the biofilter, pH of the biofilter effluent, and pressure drop across the biofilter bed within the ranges specified during the initial performance test.

Permit specific conditions will require that these operating parameters be submitted along with the facility's Title V operating permit application.

SECTION IX. OKLAHOMA AIR POLLUTION CONTROL RULES

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

OAC 252:100-3 (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. The "Air Quality Impacts" section includes a demonstration of compliance with these standards.

OAC 252:100-4 (New Source Performance Standards) [Applicable]
Federal regulations in 40 CFR Part 60 are incorporated by reference as they exist on July 1, 2002, except for the following: Subpart A (Sections 60.4, 60.9, 60.10, and 60.16), Subpart B, Subpart C, Subpart Ca, Subpart Cb, Subpart Cc, Subpart Cd, Subpart Ce, Subpart AAA, and Appendix G. NSPS regulations are addressed in the "Federal Regulations" section.

OAC 252:100-5 (Registration, Emissions Inventory, and Annual Fees) [Applicable]
The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. Consistent with OAC 252:100-5-2-1(a), on an annual basis Huber will submit an annual emission inventory on forms obtained from the Division. Additionally, annual operating fees will be submitted to the Division in accordance with 252:100-5.2.2.

OAC 252:100-7 (Permits for Minor Sources) [Not Applicable]
The facility will be a Part 70 source, therefore requirements of Subchapter 8 are applicable instead of Subchapter 7.

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 which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) 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
- 0.6 TPY of any one Category A toxic substance
- 1.2 TPY of any one Category B toxic substance

- 6.0 TPY of any one Category C toxic substance

The applicant has fulfilled all applicable requirements relative to the construction permit application provisions. Subchapter 8-4(b)(5) requires facilities subject to requirements to submit a major source operating permit application within 180 days of commencement of operation. Huber will submit an operating permit application to maintain compliance with this requirement.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]
In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day. Within ten (10) working days after the immediate notice is given, the owner or operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Part 70/Title V sources must report any exceedance that poses an imminent and substantial danger to public health, safety, or the environment as soon as is practicable. Under no circumstances shall notification be more than 24 hours after the exceedance.

OAC 252:100-13 (Prohibition of 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. The facility will not conduct open burning of waste or any other material not specifically designated as permissible. No periodic compliance is necessary to assure compliance with this subchapter. The facility will make an annual certification of compliance with all applicable rules.

OAC 252:100-17 (Incinerators) [Not Applicable]
The heat sources (EU-HS1 and EU-HS2) are considered to be "incinerators" and are potentially subject to the requirements of OAC 252-100-17. The proposed design of the heat sources meets the requirements of OAC 252:100-17-5. The thermal oxidizer (CD-RTO1) controls the emissions from the heat sources. Consistent with OAC 252:100-17-2.1, thermal oxidizers are exempt from the requirements of this subchapter; therefore, the heat sources are subsequently exempt from the incinerator requirements of OAC 252:100-17.

OAC 252:100-19 (Particulate Matter) [Applicable]
This subchapter limits emissions of particulate matter from processes other than fuel-burning equipment based on their process weight rate.

If the Process Rate Weight (P) is less than or equal to 30 tons/hour:

$$E_{\text{Allow lbs/hr}} = 4.10\,(P)^{0.67}$$

If the Process Weight Rate (P) is greater than 30 tons/hour:

$$E_{\text{Allow lbs./hr}} = 55\,(P)^{0.11} - 40$$

The allowable emissions, calculated in the following table for process units, are based on the above two formulas. The allowable emissions for the indirect fired combustion units (subject to OAC 252:100-19.4) are determined by OAC 252:100, Appendix C. Emissions are computed based on estimated maximum particulate matter emissions. No specific periodic monitoring, other than recordkeeping on the total process throughput is required to demonstrate compliance with this subchapter for the facility.

COMPLIANCE WITH SUBCHAPTER 19

Emission Point	Total Process Weight Rate Related To Emission Point TPH	Allowable PM Emissions Per Subchap. 19.12 lb/hr	Permitted Total PM_{10} Emissions, lb/hr
EP-RTO1 (RTO)	70.5	47.83	15.20
EP-BF1 (Biofilter)	57.4	45.87	10.47
EP-FF1 (Stranders)	70.5	47.83	1.54
EP-FF2 (Screening)	70.5	47.83	2.91
EP-FF3 (Forming)	70.5	47.83	5.35
EP-FF4 (Saws)	57.4	45.87	4.75
EP-FF5 (Sander)	51.7	44.89	5.13
EP-FF6 (Fuel)	70.5	47.83	0.86
EP-FF7 (Fines Reclaim)	70.5	47.83	0.12

Subchapter 19 also specifies PM emissions limitations based on heat input capacity. The following table lists applicable standards by unit and anticipated PM emissions.

Emission Point	Max Heat Rating Mmbtu/Hr	Allowable PM Emissions Per Subchap. 19.4, lb/ MMBTU	Permitted PM Emissions, lb/MMBTU
EP-EG1 (Em Gen 1)	2.8	0.6	0.31 (diesel)
EP-EG2 (Em Gen 2)	3.5	0.6	0.31 (diesel)
EP-FP1 (Fire Pump 1)	3.5	0.6	0.31 (diesel)
EP-PV1 (Prop Vap 1)	2.75	0.6	0.006 (propane)
EP-AMU1-22 (Air Make Up Units(22)	16.64, individual 1.5	0.6	0.006

EP-HEATER1-7 (7)	0.7	0.6	0.006

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for 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. The facility will conduct observations for visible emissions from stacks and egress points on an annual basis to demonstrate compliance with this requirement.

OAC 252:100-29 (Fugitive Dust) [Applicable]
Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or windborne without taking "reasonable precautions" to minimize emissions of fugitive dust. No person shall cause or permit the discharge of any visible fugitive dust emissions 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 to interfere with the maintenance of air quality standards. Most of the materials handled are wood and wood waste, therefore non-brittle and not very susceptible to becoming fugitive dust. The facility will use best management practices to minimize particulate emissions from industrial activities and roads, in and around the plant site.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). This subchapter specifies an SO_2 emission limitation of 1.2 lb/MMBTU for solid fuel, 0.80 lb/MMBTU for liquid fuel, and 0.20 lb/MMBTU for gaseous fuel. The two heat sources (EU-HS1 and EU-HS2) are rated 135 MMBTU/H each and burns natural gas, No. 2 fuel oil, and residual wood waste, each heat source emits 0.0036 lb MMBTU SO_2, therefore, is in compliance.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
Subchapter 33 sets the following NOx limits for new solid fossil fuel-burning equipment with a rated heat input greater than or equal to 50 MMBTUH: 0.2 lb/MMBTU for gas-fired fuel-burning equipment, 0.3 lb/MMBTU for liquid-fired fuel-burning equipment, and 0.7 lb/MMBTU for solid fossil fuel-burning equipment. The two heat sources (EU-HS1 and EU-HS2) are rated 135 MMBTU/H each and burns natural gas, No. 2 fuel oil, and residual wood waste, therefore, they are subject to this subchapter. Each heat source emits 0.19 lb MMBTU NOx, therefore, is in compliance.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this project: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit or catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires new (constructed after December 28, 1974) storage tanks with a capacity between 400 and 40,000 gallons holding an organic liquid with a true vapor pressure greater than 1.5 psia

to be operated with a submerged fill pipe or with an organic vapor recovery system. Consistent with OAC 252:100-37-15(b), the permit will require storage tanks that are storing a VOC with vapor pressure greater than 1.5 psia and have a capacity greater than 400 gallons to be equipped with a permanent submerged fill pipe or a vapor recovery system as required in 252:100-37-15(a)(2).

Part 3 requires loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. The facility does not have the physical equipment (loading arm and pump) to conduct this type of loading. Therefore, this requirement is not applicable.

Part 5 limits the VOC content of paints and coatings. Consistent with OAC 252-37-25, any coating line or coating operation (that emits more than 100 pounds per 24 hour day) with VOC emissions shall use coatings that comply with the following amounts listed below. (Limits are expressed in pounds VOC per gallon coating, excluding the volume of any water and exempt organic compounds).

1) Alkyd primer – 4.8
2) Vinyls – 6.0
3) NC lacquers – 6.4
4) Acrylics – 6.0
5) Epoxies – 4.8
6) Maintenance finishes – 4.8
7) Custom product finishes – 6.5

The branding operations involve application of an ink marking to the product (OSB). The marking applied to the product can not be classified as one of the seven VOC coating operations listed above, therefore, the VOC limits associated with this regulation are not applicable to the branding operations. The paint booths other than branding at the facility utilize water-based coatings that have minimal or no VOC contained in the coating.

Part 7 requires all effluent water separators, openings or floating roofs to be sealed or equipped with an organic vapor recovery system. Consistent with OAC 252:100-37-37, the Huber facility will not utilize a single compartment or multiple compartment VOC/water separator that receives effluent water containing 200 gallons per day or more of VOC (with vapor pressure greater than 1.5 psia) from any equipment processing, refining, treating, storing, or handling VOCs.

Part 7 also requires fuel-burning equipment to be operated and maintained to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion. The Huber facility utilizes fuel-burning and refuse-burning equipment that will handle a VOC with vapor pressure greater than 1.5 psia. The fuel-burning equipment will be operated to minimize emissions of VOC, consistent with OAC 252:100-37-36. The RTO will control VOC emissions from the Heat Sources and Dryers and the Biofilter will control VOC emissions from the Press.

OAC 252:100-41 (Hazardous Air Pollutants and Toxic Air Contaminants) [Applicable]

Part 3 addresses hazardous air contaminants. NESHAP, as found in 40 CFR Part 61, are adopted by reference as they exist on July 31, 2002, with the exception of Subparts B, H, I, K, Q, R, T, W and Appendices D and E, all of which address radionuclides. In addition, General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, L, M, N, O, Q, R, S, T, U, W, X, Y, CC, DD, EE, GG, HH, II, JJ, KK, LL, MM, OO, PP, QQ, RR, SS, TT, UU, VV, WW, YY, CCC, DDD, EEE, GGG, HHH, III, JJJ, LLL, MMM, NNN, OOO, PPP, RRR, TTT, VVV, XXX, CCCC, GGGG, HHHH, NNNN, SSSS, TTTT, UUUU, VVVV, and XXXX are hereby adopted by reference as they exist on July 31, 2002. These standards apply to both existing and new sources of HAPs. These requirements are covered in the "Federal Regulations" section.

Part 5 is a **state-only** requirement governing toxic air contaminants. New sources (constructed after March 9, 1987) emitting any category "A" pollutant above deminimis levels must perform a BACT analysis, and if necessary, install BACT. All sources are required to demonstrate that emissions of any toxic air contaminant which exceeds the deminimis level does not cause or contribute to a violation of the MAAC. Modeling was conducted using the ISCST3 model for toxics that are not covered under an applicable Part 63 NESHAP and are above de minimis levels. Results listed in the following table indicate compliance with MAACs.

Toxic	CAS Number	Toxicity Class	Operating Scenarios	MAAC ug/m^3	Ambient Impacts ug/m^3
Ethyl Acetate	141786	C	Normal	144,164	27.6
Ethylene Glycol Monobutyl Ether Acetate	112072	C	Normal	3,280	12.2
Ammonia	7664417	C	Normal	1,742	14.9
			Biofilter Bypass		14.9
			RTO Bypass		2.38
Limonene	138863	C	Normal	30,000	0.361
			Biofilter Bypass		0.361
			RTO Bypass		1.15
Alpha-Pinene	80568	C	Normal	1,671	76.4
			Biofilter Bypass		40.1
			RTO Bypass		77.8
Beta-Pinene	127913	C	Normal	1,671	28.3
			Biofilter Bypass		14.8
			RTO Bypass		28.7

OAC 252:100-43 (Sampling and Testing Methods) [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 Quality Rules are not applicable to this project:

OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category

SECTION X: FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable]
The total emissions are less than the threshold level of 250 TPY of any single regulated pollutant and the facility is not one of the 26 specific industries with a threshold of 100 TPY.

NSPS, 40 CFR Part 60 [Applicable]
Subpart Kb, VOL Storage Vessels. Tanks EU-RES1TK, EU-RES2TK, EU-RES3TK, EU-RES4TK, EU-RES5TK, EU-RES6TK, EU-WAX1TK, EU-WAX2TK, EU-WAX3TK, EU-RA1TK, EU-RA2TK, EU-RESCAT1TK, and EU-RAR1TK exceed the de minimis level of Subpart Kb, however, the rule changes published in Federal Register Vol. 68, No. 199, dated October 15, 2003 exempt from this subpart storage vessels presently subject to recordkeeping requirements only. Therefore, tanks to be on-site will be exempted from this subpart.
Subpart Db, Industrial-Commercial-Institutional Steam Generating Units. This subpart 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 units of greater than 100 MMBTUH. The two heat sources are subject to this subpart and shall comply with all applicable requirements.
60.42b(d)(1) sets the SO_2 standard as 0.5 lb/MMBTU for affected facilities that have an annual capacity factor for coal and oil of 30 percent or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil

of 30% or less. Percent reduction requirements are not applicable. The permit will limit the facility's annual capacity factor for oil to 30% or less.
60.45b(j) and 60.47b(f) exempt facilities that combust very low sulfur oil from testing and monitoring requirements if the owner or operator obtains fuel receipts as described in 60.49b(r).
60.49b(r) requires that the owner operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under 60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in 60.41b. For the purposes of this section, the oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Quarterly reports shall be submitted to the Adminstrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the preceding quarter.
60.43b(c)(1) sets the PM standard as 0.1 lb/MMBTU for affected facilities that combust wood, or wood with other fuels, except coal, and have an annual capacity factor greater than 30% for wood.
60.43b(f) sets the opacity limit to 20% for an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels.
60.43b(g) provides that particulate matter and opacity limits apply at all times, except during periods of startup, shutdown or malfunction.
60.44b(d) sets the NOx standard to 0.3 lb/MMBTU for an affected facility that simultaneously combusts natural gas with wood, municipal-type solid waste, or other solid fuel, except coal, unless the affected facility has an annual capacity factor for natural gas of 10 percent or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent or less for natural gas. The permit will limit the facility's annual capacity factor for natural gas to 10% or less, thus the facility will not be subject to the NOx standard.
60.44b(l) does not apply as the permit will limit the facility's annual capacity factor for natural gas and oil to 10% or less per 60.44b(l)(1).

60.48b(a) requires that the owner or operator of an affected facility subject to the opacity standard under 60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.

NESHAP, 40 CFR Part 61 [Not Applicable]
There will be no sources at the facility subject to any of the requirements of 40 CFR 61, National Emission Standards for HAPs (NESHAPs).

NESHAP, 40 CFR Part 63 [Subpart DDDD will be Applicable]
Sections 63.40-63.44 of Subpart B require that new (constructed after June 29, 1998, the effective date of Section 112(g)(2)(B)) major sources of HAPs in a listed source category for which a standard has not been promulgated under Section 112(c) of the CAA must submit an application requesting an Equivalent Emission Limitation by Permit upon start-up. This "112(g)" MACT determination applies to all sources of HAPs in a listed or not listed source category located at the major source of HAPs. Per 40 CFR 63.41, the 112(g) determination,

(Case-by-Case MACT), yields "the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source."

Subpart DDDD, (Plywood and Composite Wood Products (PCWP))
This subpart was proposed on January 9, 2003. This proposed rule applies to OSB manufacturing and associated operations. The affected source, as defined by the proposed rule, is the collection of dryers, blenders, formers, presses, board coolers, and other process units associated with the manufacturing of plywood and composite wood products at a plant site. The affected source includes, but is not limited to green end operations, drying operations, blending and forming operations, pressing and board cooling operations, miscellaneous finishing operations (such as sanding, sawing, patching, edge sealing and other finishing operations not subject to other NESHAP), raw material storage, onsite wastewater treatment operations specifically associated with PCWP manufacturing, miscellaneous coating operations, and lumber kilns. Compliance options based on production, add-on control, and emission-averaging are described in the proposed MACT.

Subpart ZZZZ (Reciprocating Internal Combustion Engine)
This subpart, known as "RICE," was proposed on December 19, 2002. An affected source is any existing, new, or reconstructed stationary RICE located at a major source of HAP emissions, with an exemption for emergency power/limited use units. This exemption applies to the emergency generator engines and the fire pump engine, therefore this MACT will not apply to this facility.

Subpart DDDDD (Industrial/Commercial/Institutional Boiler and Process Heaters)
This MACT was proposed on January 13, 2003. The proposed rule applies to each industrial boiler, institutional and commercial boiler, and process heater that is located at, or is part of, a major source of hazardous air pollutants (HAP) emissions. Each boiler or process heater is an affected source, except those specifically excluded. The facility will contain two 135 MMBTUH potentially-affected heat sources that provide some process heat as well as providing hot gases for the dryers. A significant part of the MACT's definition of "boiler" is that it has the primary purpose of recovering thermal energy in the form of steam or hot water. The sensible heat transferred to the dryers is 200 MMBTUH and to the thermal fluid is 70 MMBTUH; therefore, the heat transferred to the dryers is the primary purpose of these heat sources, and they do not meet the MACT's definition of boilers. The MACT also states in its definition of process heater that they are devices in which the combustion gases do not directly come into contact with process materials. Since the thermal energy of the hot gases do come into direct contact with process materials (wood strands), the heat sources do not qualify as process heaters. Since the sources do not fit the definition of affected facility, Subpart DDDDD does not apply.

Compliance Assurance Monitoring, 40 CFR Part 64 [Applicable]

Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, which is required to obtain a Title V permit, if it meets all 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.

The sources and pollutants that meet these three conditions are as follows:

- Heat sources/Dryers – NO_x, VOC, CO, and PM
- Press – VOC
- Pneumatic conveying systems (seven emission points) – PM

HAP is excluded because the major HAP sources must comply with MACT monitoring requirements.

CAM requirements will be addressed in the Title V Operating Permit and the initial performance testing required by this Construction Permit will provide monitoring data for all operating parameters.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
This facility does not store any regulated substance above the applicable threshold limits. More information on this federal program is available at the web site: http://www.epa.gov/ceppo/.

Stratospheric Ozone Protection, 40 CFR Part 82 [Applicable]
This facility does not produce, consume, recycle, import, or export any controlled substances or controlled products as defined in this part, nor does the facility perform service on motor (fleet) vehicles which involves ozone-depleting substances. Therefore, as currently operated, this facility is not subject to these requirements. To the extent that the facility has air-conditioning units that apply, the permit requires compliance with Part 82.

SECTION XI. COMPLIANCE

Tier Classification And Public Review

This application has been determined to be a **Tier II** based on the request for a construction permit for a major new facility. 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 landowner has been notified.

The applicant published the "Notice of Filing a Tier II Application" in the *McCurtain County News* on July 16, 2003, a daily newspaper of general circulation in McCurtain County. The notice said that the application was available for public review at the Broken Bow Public Library or at the AQD office in Oklahoma City. The applicant also published the "Notice of Draft Permit and Public Meeting" in *McCurtain County News* on October 1, 2003. The public meeting on the draft permit was held at the City Hall of Broken Bow, Broken Bow Economic Development Authority at 210 N. Broadway, Broken Bow, Oklahoma, on Monday, November 3, 2003 at 6:30 P.M. The facility is located within 50 miles of the border of Oklahoma and the states of Texas and Arkansas. The states of Texas and Arkansas were notified of the draft permit. Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page:*http://www.deq.state.ok.us.*

Comments were received on the draft permit by Huber and the public. Huber's comments identified the error in PM_{10} emission factors listed in the Permit Memorandum, spelling errors, some clarifications, and NSPS Kb applicability change due to the new rule change. All comments by Huber have been incorporated in the proposed permit. A response to those comments from the public is provided below. No comments were received from the states of Texas and Arkansas.

Response to Comments on the Draft Permit

The following comments dated October 30, 2003, were received from Tim Tadlock, Production and Environmental Manager of Pan Pacific Products.

1. Comment: ***"The calculated particulate matter ("PM" emissions associated with the Facility's dryers and press (as presented on pages 10 and 11 of the Permit Memorandum ("Memo")) appear to be inconsistent with the specified emission factors. To the extent the specified PM emission rates are incorrect, the allowable PM emission limits specified in the Draft Permit will need to be corrected."***

   Response: PM_{10} emissions listed in the Permit Memorandum and the Permit Specific Conditions for the dryers and press are correct. However, emission factors cited on Page 10 and Page 11 of the Permit Memorandum were incorrect. These are emission factors of filterable PM_{10} instead of total PM_{10} including condensables. Corrections have been made in the Permit Memorandum.

2. Comment: ***"Facility emissions of MDI, acetaldehyde, acrolein, benzene, cumene, formaldehyde, methanol, and phenol (all of which are regulated as toxic air contaminants pursuant to ...OAC 252:100-41) are indicated on Page 14 of the Memo as exceeding the de minimis emission rates specified in OAC 252:100-41-43(a)(5). The Draft Permit specifies the following:***

   "All sources are required to demonstrate that emissions of any toxic air contaminant which exceeds the de minimis level does not cause or contribute to a violation of the MAAC."

Notwithstanding, the Draft Permit indicates facility emissions of the above-referenced toxic air contaminants were not modeled to demonstrate compliance with the applicable "MAAC" as determined by the ODEQ pursuant to OAC 252:100-41-40 as the emission of such contaminants are "covered" under an applicable National Emission Standard for Hazardous Air Pollutants ("NESHAP") (40 CFR Part 63). In particular, the Memo identifies Subpart DDDD (Plywood and Composite Wood Products) NESHAP as the only NESHAP applicable to the facility.

As stated in OAC 252:100-41-43(a)(3), the MAAC requirements do not apply to "any source operation for which an emission standard is in effect under 252:100-41-15;...." (Emphasis added). As noted in the Memo, Subpart DDDD was proposed on January 9, 2003. However, the final regulation has not been promulgated as of the date of this letter, nor is the same expected to be promulgated within the next several months. Therefore, Subpart DDDD of the NESHAP is not currently "in effect" as required for purposes of applying the above exemption from the MAAC requirements.

Although facility emissions of MDI, acetaldehyde, acrolein, benzene and cumene could likely be addressed through SCREEN modeling the demonstration of compliance with the applicable MAAC for formaldehyde, methanol, and phenol would likely require more refined analysis due to existing source emissions of these contaminants in the vicinity of the facility. The above analysis should be conducted prior to issuance of the Permit to confirm facility emissions of toxic air contaminants will not cause or contribute to violation of an applicable MAAC.

Further, acrolein, benzene, formaldehyde, and MDI are considered Category A toxic air contaminants. In accordance with OAC 252:100-41-37, new sources emitting any Category A toxic air contaminant is required, at a minimum, to install Best Available Control Technology ("BACT") relative to such toxic air contaminants. Based on review of Huber's permit application and submittals, we have been unable to locate the required BACT analysis. A BACT analysis should be completed prior to issuance of the Permit.

Based upon available information, the above referenced analysis was not conducted and emission limitations resulting therefrom were not specified in the Memo and Draft Permit for acetaldehyde, acrolein, formaldehyde, methanol, and phenol since these pollutants are proposed to be regulated under Subpart DDDD. It is agreed that, upon promulgation of a final rule and adoption by the DEQ, exemption of these toxic air contaminants from the applicability and review currently required under OAC 252:100-41, Part 5 would be appropriate, However, the facility's acetaldehyde, acrolein, formaldehyde, methanol, and phenol emissions are not covered under OAC 252:100-41-43(a)(3) since Subpart DDDD emission standards are not in effect at this time. Additionally, Subpart DDDD is not currently identified in OAC 252:100-41-15. Thus, it seems appropriate that the facility be required to compete modeling of emissions of these pollutants, and the Permit specify applicable emission limitations for such toxic air contaminants.

Response: OAC 252:100-41-43 (a)(3) exempts "any source operation for which an emission standard is in effect under 252:100-41-15" from requirements of Part 5 of Subchapter 41. As stated in SECTION VIII on Page 22 of the Permit Memorandum, "Oklahoma rules (OAC 252:100-8-4(a)(2)) adopt federal regulations (40 CFR Subpart B, Sections 63.40 to 63.44, Requirements for Control Technology for Major Sources of Hazardous Air Pollutants) by reference." Section 63.43 of Subpart B requires that any facility not included in a listed source category (or for which a standard has not been promulgated under Section 112c of the CAA prior to May 15, 2002) that constructs or reconstructs a major source of HAPs after June 29, 1998, is subject to a case-by-case MACT determination. While it is true that the MACT for the source category that this facility is in is not yet in effect, this source is subject to case-by-case MACT. OAC 252:100-41-15 adopted General Provisions as found in 40 CFR Part 63, Subpart A, and MACT standards as found in other promulgated subparts. Subpart A of Part 63 states that this part contains national emission standards for hazardous air pollutants established pursuant to Section 112 of the Act as amended November 15, 1990. By adopting Subpart A of Part 63, OAC 252:100-41-15 is also adopting case-by-case MACT determinations required by 112(g) of the ACT.

In addition, 63.1(a)(14) provides that equivalent emission limitations established pursuant to section 112(g) of the ACT shall have the force and effect of requirements promulgated in this part and shall be subject to the provisions of this subpart.

Therefore, Subchapter 41 requirements are exempted for those pollutants subject to the case-by-case MACT determination.

3. Comment: ***"The modeling identified in the Memo does not appear to include criteria pollutant and/or toxic air contaminant emissions associated with existing sources/facilities located within close proximity to the facility. Section 2.3.4 of the "Air Dispersion Guidelines for Oklahoma Air Quality Permits" (July 2003) states in part, the following:***

> ***"Existing nearby sources may need to be included in a refined modeling analysis. The AQD has historically allowed the use of the "20-D rule" to narrow the list of sources to only those that have the potential to significantly impact the modeling domain.***
>
> ***The "20-D Rule" states that when a nearby source's emissions (TPY) are less than 20 times the distance between the nearby source and the source in question (distance in kilometers), that source may be designated a background source and not modeled. Stated differently, any minor source (100 TPY or less), which is 5 km or more from the source in question, may be preemptively excluded."***

The facility will be located less than 500 yards from Pan Pacific Products facility which emits similar pollutant. It would seem important in demonstrating compliance with the National Ambient Air Quality Standards (NAAQS) and MAAC to consider potential emissions from Pan Pacific Products facility as well as any other relevant emission sources".

Response: Section 2.3.4 of the "Air Dispersion Guidelines for Oklahoma Air Quality Permits" cited above is a general section about nearby sources. This section does not specify at what level of modeling nearby sources are required to be included. However, Section 3.3 of the Guideline specifically mentions that Title V modeling should be conducted by evaluating the total source impact and adding an appropriate monitored concentration, which is how the modeling for this permit was conducted. Section 4.3 of the Guideline specified that nearby sources with the application of the 20-D rule are required to be included for PSD modeling. Since this source is not a PSD source, the guideline for state level modeling was followed. In addition, Subchapter 41 does not require including background concentrations for MAAC compliance.

4. Comment: "*As specified in OAC 252:100-8-4(a), the actual construction of a new Part 70 source is prohibited prior to the DEQ's issuance of a construction permit:*

   (1) Construction permit required. No person shall begin actual construction or installation of any new source that will require a Part 70 permit without first obtaining a DEQ-issued air quality construction permit[1&2].

   Pan Pacific Products has become aware of ongoing construction activity at the facility. To the extent Huber has "begun actual construction" prior to the issuance of a DEQ construction permit, this appears to be in violation of OAC 252:100-8-4(a)(1)[3]. If confirmed, then the Draft Permit should include a compliance schedule (inclusive of a schedule of remedial measures including an enforceable sequence of actions with milestones leading to compliance with any and all applicable requirements for which the facility will be in noncompliance at the time of issuance of the Permit.

   Note 1: The applicable definition of "begin actual construction" as used within the cited regulation is specified in OAC 252: 100-8-1.1, which states the following:

   (B) for purposes of Part 5 of this Subchapter, that the owner or operator has begun the construction or installation of the emitting equipment on a pad or in the final location at the facility.

   Note 2: It should be noted that Huber's Part 70 Construction Permit Application dated March 2003 did not identify or certify compliance with the requirement to obtain a construction permit prior to beginning actual construction as specified in OAC 252:100-8-4(a)(1).

   Note 3: Additionally, if Huber has "begun actual construction" as defined pursuant paragraph (A) of the definition of that term in OAC 252:100-8-1.1, this would also appear to be in direct violation of the Prevention of Significant Deterioration (PSD) requirements set forth in OAC 252:100-8-30. This appears to be the case since the facility's potential-to-emit, without consideration of controls (as the controls are not currently subject to a federally enforceable permit provision), exceeds "major stationary source" levels (i.e., 250 tons per year of a pollutants subject to regulation).

Response: For the purposes of PSD permitting, EPA has issued significant guidance as to the allowed activities prior to issuance of a construction permit. This guidance has historically allowed limited activities (i.e., minimal ground clearance, no foundations, etc.) prior to permit issuance. However, this guidance is specifically directed at facilities proposing to emit above the PSD thresholds and to be permitted as an actual PSD facility.

The Huber Corporation has proposed to limit its emissions below the PSD threshold of 250 TPY for any regulated pollutant and is, therefore, not considered a PSD facility subject to the referenced guidance. Since an enforceable permit will be in place prior to any equipment becoming operational or having a potential to emit any pollutant, the only construction limitations are those contained in OAC 252:100-8.

As cited in OAC 252:100-8-1.1, "begin actual construction" for Part 70 sources (non-PSD sources) is defined as, "...the owner or operator has begun the construction or installation of the emitting equipment on a pad or in the final location at the facility." Historically, Air Quality Division has consistently interpreted OAC 252:100-8-4(a)(1) and OAC 252:100-8-1.1 "begin actual production" so as to provide sufficient flexibility to the regulated community and, at the same time, prevent the possibility of emissions from emission units prior to the issuance of an appropriate construction permit.

In order to insure compliance with these rules, an inspection of the facility was conducted on November 3, 2003, prior to the public meeting. Several units were on-site and appeared to be in their final location. Ductwork had not been constructed; neither electrical power nor natural gas utilities were available at the site; and none of the emitting units were capable of being operated. The control room contained only the outer walls. Only temporary power was available at the site to support construction activities.

Based on this review, the facility has only conducted activities consistent with historically allowed activities.

This comment also referred to the requirement to identify or certify compliance with the requirement to obtain a construction permit. While the application does not specifically mention the requirement to comply with the Construction Permit Application, it does reference the applicability of Subchapter 8 as an applicable rule. The application states that the facility will comply with the operating permit application requirements as stated under the rule. Submittal of the construction permit application is, in and of itself, identification of the requirement to obtain a construction permit. Therefore, re-submittal of the form will not be required.

EPA also made comments regarding the ozone background concentration used for the NAAQS demonstration and the reference to testing Method 25 in Specific Condition #7 of this permit.

After further review of the ozone background concentration, it was determined that the first high McAlester reading in 2003 is most appropriate. Further review also revealed an error in the calculated ozone concentration provided by the applicant. The applicant was informed of the error and submitted revisions. The revision also made it clear that ozone modeling was based on the worst case scenario with the RTO bypass emissions occurring a maximum of two hours in a 24-hour period, biofilter bypass emissions occurring continuously, and other emissions modeled for 24-hour operation. Based on these changes, the facility will continue to comply with the NAAQS. The RTO bypass emissions will be restricted to a maximum of two hours in a 24-hour period.

Additionally, NSPS Method 25 has been removed from Specific Condition #7 as a testing option.

Fees Paid

Part 70 construction permit application fee of $2,000.

SECTION XII. SUMMARY

The applicant has demonstrated the ability to achieve compliance with all applicable Air Quality Rules and Regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues. Issuance of the construction permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

J. M. Huber Corp **Permit No. 2003-099-C**
Huber Engineered Woods, Broken Bow

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality Division on March 14, 2003, with additional information received on April 25, 2003, June 18, 2003, July 15, 2003, and August 12, 2003. The Evaluation Memorandum dated December 29, 2003, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to, the conditions contained herein.

1. Points of emissions and emission limitations for each point: [OAC 252:100-8-6(a)]

EUG 2 - COMBUSTION UNITS
The equipment items listed below are considered insignificant because each emits less than 5 TPY.

Emission Unit	Point	EU Name/Model	Size	Construction
EU-EG1	EP-EG1	Emergency Generator #1	900-hp	2003
EU-EG2	EP-EG2	Emergency Generator #2	900-hp	2003
EU-FP1	EP-FP1	Fire Pump Engine	500-hp	2003
EU-PV1	EP-PV1	Propane Vaporizer	2.75 MMBTUH	2003
EU-AMU1 - 22	EP-AMU1 - 22	Air Make Up Units (22)	16.6 MMBTUH	2003
EU-HEATR1 -7	EP-HEATER1 - 7	Space Heaters (7)	0.7 MMBTUH	2003

EU-EG1, EU-EG2, EU-FP1, AND EU-PV1 shall each be equipped with an hour meter.

EUG 3 – HEAT/DRYER UNITS

1). Emissions for Normal Operation

		NO_X		CO		Total PM_{10}		VOC as Emitted		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Heat Source No. 1 Heat Source No. 2	EP-RTO1	58.42	233.67	24.00	96.00	15.20	60.80	17.40	69.60	0.97	3.20

2). Emissions considering bypass scenario: bypassing time accounts for 3% of the total heat source/dryer operating hours, which results in 240 hrs/yr for bypassing and 7,760 hrs/yr for normal operation.

		NO_X		CO		Total PM_{10}		VOC as Emitted		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Heat Sources (No Bypass)	EP-RTO1	58.42	226.66	24	93.13	15.20	58.98	17.4	67.51	0.97	3.1
Heat Sources (Control Bypass)	EP-DRYER1BYPASS EP-DRYER2BYPASS	50.88	6.11	165.6	19.87	390	46.80	347.99	41.76	0.97	0.1

A. Combined throughput of the two dryers shall not exceed 70.5 ODT/hr (daily average) and 564,000 ODT/yr. The facility may operate the two dryers at higher throughput when conducting the required stack test (during the test only) in order to determine the maximum throughput that will comply with emission limits set in the above table. The throughput determined by the stack test will then be used in the Title V Operating Permit. Subsequent to the initial required stack test, the facility may, upon notice to the state, request the opportunity to stack test again at increased operating throughput rates (during the test only) to demonstrate compliance with permitted emission levels set in the above table. If compliance with the emissions limits set in the table is demonstrated at the higher throughput rate, the Title V Operating Permit will be amended to include the higher throughput rates.

B. The two heat sources shall be fueled with the following :
  - -Bark and residual wood waste, including sander dust and waste board from the process
  - -Pipeline quality natural gas
  - -propane
  - -municipal type solid waste including WESP sludge, resin, release agent, wax, edge seal, paper, and other wastes
  - -oils and waste oils

C. All air exhausts from the heat sources/dryers shall be processed by a wet electrostatic precipitator (WESP) controlling PM_{10} to 0.015 gr/dscf and a regenerative thermal oxidizer (RTO) controlling 95% VOC and 85% CO under normal operating conditions, or other equivalent air pollution control devices.

D. Control bypass time for Routine Control Device Maintenance shall not exceed 240 hrs/yr. The RTO bypass shall not exceed two hours in a 24-hour period.

E. The annual capacity factor of municipal-type waste shall not exceed 30% and the annual capacity factor of natural gas and oil as fuel shall not exceed 10%.

EUG 4 - PRESS

1). Emissions from Normal Operation

		Total PM_{10}		VOC as Emitted	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1	EP-BF1	10.47	32.99	31.05	97.80

2). Emissions considering bypass scenario: bypassing time accounts for 0.5% of the total press operating hours, which results in 40 hrs/yr for bypassing and 7,960 hrs/yr for normal operation.

		Total PM_{10}		VOC as Emitted	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1 (No Bypass)	EP-BF1	10.47	32.83	31.05	97.31
Press No. 1 (Control Bypass)	EP-PRESSBYPASS	52.37	0.82	103.43	2.07

A. Throughput of the press shall not exceed 100 MSF/hr 3/8" basis (daily average) and 630 MMSF/yr. The facility may operate the press at higher throughput when conducting the required stack test (during test only) in order to determine the maximum throughput that will comply with emission limits set in the above table. The throughput determined by the stack test will then be used in the Title V Operating Permit. Subsequent to the initial required stack test, the facility may, upon notice to the state, request the opportunity to stack test again at increased operating throughput rates (during the test only) to demonstrate compliance with permitted emission levels set in the above table. If compliance with the emissions limits set in the table is demonstrated at the higher throughput rate, the Title V Operating Permit will be amended to include the higher throughput rates.

B. Control bypass time for Routine Control Device Maintenance shall not exceed 40 hrs/yr.

C. The press and board cooler shall be operated only when a negative pressure is maintained within the board cooler enclosure and the building housing the press while capturing decompression and board cooler gases from the product produced in the press via a press length hood. The average facial velocity of air through the two primary natural draft openings located at the press infeed and press outfeed (any permanent opening in the enclosure that remains open during operation of the facility and is not connected to a duct in which a fan is installed) shall be at least 200 fpm (device measuring velocity of air shall be installed on the press infeed and outfeed natural draft openings).

D. All air exhausts from the board cooler shall be routed to the press building. The direct press exhaust pickup points shall be processed by a wet electrostatic precipitator (WESP) and a biofilter; the air exhausts collected by the press hoods and the general room air exhausts shall be processed by the biofilter; and the air exhaust from the pre-heater shall be processed by a scrubber and the biofilter, providing a total control efficiency of 70% for VOC and controlling PM_{10} to 0.015 gr/dscf during normal operating conditions, or other equivalent air pollution control devices.

EUG 5 - PM SYSTEMS

		Total PM_{10}	
Emission Unit	**Point**	**lb/hr**	**TPY**
Stranders – System 9110	EP-FF1	1.54	6.17
Screening – System 9120	EP-FF2	2.91	11.66
Forming – System 9130	EP-FF3	5.35	21.38
Saws – System 9140	EP-FF4	4.75	19.02
Sander – System 9150	EP-FF5	5.13	20.50
Fuel – System 9195	EP-FF6	0.86	3.43
Reclaim Silo–Sys. 9190	EP-FF7	0.12	0.48

A. Each operation shall be equipped with a fabric filter that controls PM_{10} emission to at least 0.01 gr/dscf, or other equivalent air pollution control devices.

EUG 6 - TANKS

The equipment items listed below are considered insignificant because each emits less than 5 TPY.

Emission Unit	Point	EU Name/Model	Capacity/Throughputs	Const. Date
EU-GAS1TK	EP-GAS1TK	Gasoline Storage Tank No. 1	500-gal/ 2,000 gal/yr	2003
EU-EG1TK	EP-EG1TK	Emergency Gen. No. 1 Diesel Tank	1,000-gal/ 3,000 gal/yr	2003
EU-EG2TK	EP-EG2TK	Emergency Gen. No. 2 Diesel Tank	1,000-gal/ 3,000 gal/yr	2003
EU-FP1TK	EP-FP1TK	Fire Pump Engine No. 1 Diesel Tank	500-gal/ 1,500 gal/yr	2003
EU-ME1TK	EP-ME1TK	Mobile Equipment Diesel Tank No. 1	1,000-gal 20,000 gal/yr	2003
EU-KER1TK	EP-KER1TK	Kerosene Storage Tank No 1	500-gal/ 2,500 gal/yr	2003
EU-UR1TK	EP-UR1TK	Urea Storage Tank No. 1	10,000 gal/ 127,962 gal/yr	2003
EU-WAX1TK	EP-WAX1TK	Wax Storage Tank No. 1	25,000-gal 1,582,866 gal/yr	2003
EU-WAX2TK	EP-WAX2TK	Wax Storage Tank No. 2	25,000-gal 1,582,866 gal/yr	2003
EU-WAX3TK	EP-WAX3TK	Wax Storage Tank No. 3	25,000-gal 1,582,866 gal/yr	2003
EU-RES1TK	EP-RES1TK	Resin Storage Tank No. 1	25,000-gal/ 4,667,122 gal/yr	2003
EU-RES2TK	EP-RES2TK	Resin Storage Tank No. 2	25,000-gal 4,667,122 gal/yr	2003

Emission Unit	Point	EU Name/Model	Capacity/Throughputs	Const. Date
EU-RES3TK	EP-RES3TK	Resin Storage Tank No. 3	25,000-gal 4,667,122 gal/yr	2003
EU-RES4TK	EP-RES4TK	Resin Storage Tank No. 4	25,000-gal 4,667,122 gal/yr	2003
EU-RES5TK	EP-RES5TK	Resin Storage Tank No. 5	25,000-gal 4,667,122 gal/yr	2003
EU-RES6TK	EP-RES6TK	Resin Storage Tank No. 6	25,000-gal 4,667,122 gal/yr	2003
EU-RESCAT1TK	EP-RESCAT1TK	Resin Catalyst Storage Tank No. 1	25,000-gal/ 28,633 gal/yr	2003
EU-RA1TK	EP-RA1TK	Release Agent Storage Tank No. 1	25,000-gal/ 175,011 gal/yr	2003
EU-RA2TK	EP-RA2TK	Release Agent Storage Tank No. 2	25,000-gal/ 175,011 gal/yr	2003
EU-CAU1TK	EP-CAU1TK	Caustic Storage Tank No. 1	10,000-gal/ 10,988 gal/yr	2003
EU-RAMIX1TK	EP-RAMIX1TK	Release Agent Mix Tank No. 1	1,000-gal/ 174,650 gal/yr	2003
EU-RAR1TK	EP-RAR1TK	Release Agent Recycle Tank 1	500-gal/ 174,650 gal/yr	2003

EUG 7 - COATING OPERATIONS

		Total PM_{10}		VOC	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Paint Booth No. 1 Rim Board Paint Booth No. 2 Sander Paint Booth No. 3 Finish/hand	EP-PBFUG	--	--	0.98	2.13
Stenciling Operation Fugitives	EP-STENFUG	--	--	--	--
Grade Operation Fugitives	EP-GRADEFUG	--	--	0.08	0.15
Branding Booth	EP-BRANDB1F	0.01	0.02	11.26	22.26

Material usage rate and VOC content for the coating operations are limited below based on monthly average and 12-month rolling total:

Material	Usage Rate		VOC Content
	gal/hr	gal/yr	lb/gal
Ethyl Acetate Ink	1.5	5,000	7.4
Ethyl Acetate Cleaner	1.5	1,000	7.51
Black Stamping Ink	1	4,000	0.08
Blue Edgeseal	11	48,000	0
Clear Ultraseal	67	290,000	0
Clear Edgeseal	37	160,000	0.08
White Stencil Paint	1	2,500	0

2. Upon issuance of an operating permit, the facility shall be authorized to operate as follows based on 12-month rolling totals:

EU SG1: 8,760 hrs/yr
EU-PV1: 720 hrs/yr
EU-FP1, EU-EG1, and EU-EG2: 26 hrs/yr
EU-AMU1-22 and EU-HEATR1-7: 5,040 hrs/yr
The rest of the facility: 8,760 hrs/yr

3. The two heat sources are subject to NSPS Subpart Db and shall comply with applicable requirements including but not limited to the following: [40 CFR Part 60.40b-49b]

A. Emissions Standards:
   a. PM: 0.1 lb/MMBTU [40 CFR Part 60.43b(c)(1)]
   b. Opacity: 20% (6-minute average), except for one 6-minute period per hour of not more than 27% opacity. [40 CFR Part 60.43b(f)]
   c. SO_2: 0.5 lb/MMBTU [40 CFR Part 60.43b(f)]

B. Test Requirements:
   a. Compliance with PM standard shall be determined through performance testing as described in 60.46b(d).
   b. Compliance with SO_2 standard shall be determined through testing requirements as described in 60.45b.

C. Emission Monitoring
   a. 60.48b(a) requires that the owner or operator of an affected facility subject to the opacity standard under 60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.
   b. SO_2 monitoring shall be in compliance with 60.47b.

D. 60.49b: Reporting and Recordkeeping requirements.

4. As part of the operating permit application, the permittee shall include a copy of the format in which required records will be kept. [OAC 252:100-43]

5. As part of the operating permit application, the permittee shall specify operating parameters which indicate proper functioning of each air pollution control device. These parameters shall include, but not be limited to, the following: [OAC 252:100-43]

-Pressure drop across fabric filters (FF1 – FF7)
-Temperature of inlet gas to the WESPs for dryers
-Secondary transformer/rectifier voltage and current of the WESPs for dryers
-RTO firebox temperature
-Static pressure at the inlet of the RTO
-Combustion chamber temperature for the heat sources
-Fuel flow rate for the heat sources
-Urea reagent injection rate for heat source

6. The permittee shall keep records as follow. Required records shall be retained on location for a period of at least five years following dates of recording and shall be made available to regulatory personnel upon request. [OAC 252:100-43]

A. Dryer throughput expressed as ODT/hr (calculated as monthly average) and ODT/yr (calculated monthly as the sum of each consecutive 12 month period for annual throughput)
B. Press throughput expressed as MSF/hr 3/8" basis (calculated monthly average)and MMSF/yr 3/8" basis (calculated monthly as the sum of each consecutive 12 month period for annual throughput)
C. Material Safety Data Sheets or equivalent documents showing the volatile organic solvent content of the coating materials
D. Inspection and maintenance records of control equipment
E. Hours of control bypass (12-month rolling total) for dryers and press
F. Pressure drop across fabric filters (daily) for EUG5 sources
G. Temperature of inlet gas to the WESPs on the dryer exhaust gas stream (continuous/12-hour average)
H. Secondary transformer/rectifier voltage and current of the WESPs on the dryer exhaust gas stream (continuous/12-hour average)
I. RTO firebox temperature on the dryer exhaust gas stream (8-hour average)
J. Static pressure at the inlet of the RTO on the dryer exhaust gas stream (continuous/8-hr average)
K. Combustion chamber temperature for the heat sources (hourly)
L. Fuel flow rate for the heat sources (monthly)
M. Urea reagent injection rate for heat source (monthly average)
N. Operating hours as specified in S.C. #2

O. Material usage rates as required per S.C. #1 (monthly and 12-month rolling totals)

7. Compliance with emission limitations by EUG 3, EUG 4, and EUG 5 shall be demonstrated by performance tests by the permittee using the following test methods specified in 40 CFR 60 within 180 days of start-up. The permittee shall furnish a written report to Air Quality and such report shall document compliance with NSPS Subpart Db for the two heat sources. Performance testing shall be conducted while the unit is operated within 10% of the rate at which operating permit authorization is sought, unless the permittee can sufficiently demonstrate, at the time of testing, that the facility can not operate at 90% capacity rate, then a least of 80% capacity rate will be accepted. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality: OAC 252:100-8-6(a)]

Method 1: Sample and Velocity Traverses for Stationary Sources.
Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4: Determination of Moisture in Stack Gases.
Method 5: Determination of Particulate Emissions From Stationary Sources.
Method 7 or 7E: Determination of Nitrogen Oxide Emissions From Stationary Sources
Method 10: Determination of Carbon Monoxide Emissions From Stationary Sources
Method 18 or 25A: Determination of Volatile Organic Compounds Emissions From Stationary Sources.
Method 201/201A: Determination of PM_{10} Emissions
Method 202: Determination of condensable particulate emissions
Method 320: Measurement of Vapor Phase Organic and Inorganic Emission by Extractive FTIR, for specified compounds.

Or as an alternative to Method 320, NCASI Method CI/WP-98.01, Chilled Impinger Method for Use at Wood Products Mills to Measure Formaldehyde, Methanol, and Phenol.

For EUG 5, testing one fabric filter will be sufficient for showing compliance of all units.

VOC as emitted shall be calculated as follows:

- Subtract the methane determined by Method 18 from the THC as propane.
- Subtract predetermined responses of formaldehyde, phenol, and methanol from the THC as propane less methane. The remaining VOCs are assumed to be alpha and beta pinene which fully respond on the THC monitor. The VOC mass emission rate is then calculated using the molecular weight of pinene.
- Determine the concentrations and rates of methanol, formaldehyde, and phenol using the Method 320 measured concentrations.
- Sum the pinenes, methanol, formaldehyde, and phenol rates and the resulting total is VOC as emitted rate.

8. The permittee shall apply for a Title V operating permit within 180 days of commencement of operations.

9. The following records shall be maintained on-site to verify insignificant activities.
[OAC 252:100-43]

A. Each emergency generator: hours of operation (12-month rolling totals)
B. Fuel dispensing to vehicles: throughput (monthly and 12-month rolling totals, for gasoline and for diesel)
C. Vapor pressures and capacities of all 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

10. No later than 30 days after each anniversary date of the issuance of the Title V operating permit, the permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit. The following specific information is required to be included: [OAC 252:100-8-6 (c)(5)(A) & (D)]

A. Dryer throughput expressed as DOT/hr (calculated as monthly average) and DOD/yr (calculated monthly as the sum of each consecutive 12-month period for annual throughput)
B. Press throughput expressed as MSF/hr 3/8" (calculated monthly average) and MMSF/yr 3/8" (calculated monthly as the sum of each consecutive 12-month period for annual throughput)
C. Inspection and maintenance records of control equipment
D. Hours of control bypass for dryers and press
E. Pressure drop across fabric filters for EUG5 sources
F. Temperature of inlet gas to the WESPs
G. Secondary transformer/rectifier voltage and current of the WESPs for dryer exhaust gas stream
H. RTO firebox temperature
I. Static pressure at the inlet of the RTO
J. Combustion chamber temperature for the heat sources
K. Fuel flow rate for the heat sources
L. Urea reagent injection rate for heat source
M. Operating hours as listed in S.C. # 2

11. 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 252:100-11	Alternative Emissions Reduction
B.	OAC 252:100-15	Mobile Sources
C.	OAC 252:100-23	Cotton Gins
D.	OAC 252:100-24	Grain Elevators
E.	OAC 252:100-39	Non-attainment Areas
F.	OAC 252:100-47	Landfills

G.	40 CFR Part 61	NESHAP
H.	40 CFR Parts 72, 73, 74, 75 & 76	Acid Rain

Attachment D
Appendix 1

J.M. Huber Corporation
Huber Engineered Woods Division
Attn: Mr. Billy Martin
1355 Market Street, Suite 104
Dayton, TN 37321

SUBJECT: Construction Permit No. 2003-099-C
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma

Dear Mr. Martin:

Air Quality Division has completed the initial review of your permit application referenced above. This application has been determined to be a **Tier II.** In accordance with 27A O.S. §2-14-302 and OAC 252:002-31 the enclosed draft permit is now ready for public review. The requirement for public review 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. (Instruction enclosed)
2. Provide for public review (for a period of 30 days following the date of the newspaper announcement) a copy of this draft permit and a copy of the application at a convenient location (preferably a public location) within the county of the facility.
3. Send to AQD a copy of the proof of publication notice from Item #1 above together with any additional comments or requested changes, which you may have on the draft permit.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at (405) 702-4100 or the permit writer at (405) 702-4208.

Sincerely,

Dawson Lasseter, P.E., Chief Engineer
AIR QUALITY DIVISION

Enclosures
Copy: Jimmy O'Donnell, Environmental Manager
1000 J.T. Tucker Road
P.O. Box 1250
Broken Bow, Ok 74728

Attachment D
Appendix 1

Texas Commission On Environmental Quality
Operating Permits Division (MC 163)
P.O. Box 13087
Austin, TX 78711-3087

SUBJECT: Construction Permit No. 2003-099-C
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma

Dear Sir / Madame:

The subject facility has requested a construction permit under 40 CFR Part 70. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the **Oklahoma-Texas** border, a copy of the proposed permit will be provided to you upon request. Information on all permit and a copy of this draft permit are available for review by the public in the Air Quality Section of DEQ Web Page: *http://www.deq.state.ok.us.*

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or contact the permit writer at (405) 702-4100.

Sincerely,

Dawson F. Lasseter, P.E.
Chief Engineer
AIR QUALITY DIVISION

Attachment D
Appendix 1

Arkansas Dept. of Pollution Control and Ecology
P. O. Box 8913
Little Rock, AR 72219-8913

SUBJECT: Construction Permit No. 2003-099-C
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma

Dear Sir / Madame:

The subject facility has requested a construction permit under 40 CFR Part 70. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the **Oklahoma-Arkansas** border, a copy of the proposed permit will be provided to you upon request. Information on all permit and a copy of this draft permit are available for review by the public in the Air Quality Section of DEQ Web Page: *http://www.deq.state.ok.us.*

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or contact the permit writer at (405) 702-4100.

Sincerely,

Dawson F. Lasseter, P.E.
Chief Engineer
AIR QUALITY DIVISION

J.M. Huber Corporation
Huber Engineered Woods Division
Attn: Mr. Billy Martin
1355 Market Street, Suite 104
Dayton, TN 37321

SUBJECT: Construction Permit No. 2003-099-C
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma
Permit Writer: Jian Yue

Dear Mr. Martin:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to the certain standards 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 emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by March 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder, P.E., Engineering Manager
Engineering Section
AIR QUALITY DIVISION

PERMIT

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

Date_____________ Permit No. 2003-99-C

J. M. Huber Corp,

having complied with the requirements of the law, is hereby granted permission to construct the Huber Engineered Woods, Broken Bow Facility at Broken Bow, McCurtain County, Oklahoma,

subject to the following conditions, attached:

[X] Standard Conditions dated October 15, 2003

[X] Specific Conditions

_____________________________ Director, Air Quality Division

DEQ Form 885
Revised 7/93

ATTACHMENT E
AQRV Assessment and Additional Impacts Analysis

PSD CLASS I AIR IMPACT ASSESSMENT METHODOLOGY

A Prevention of Significant Deterioration (PSD) Class I air impact assessment was performed to address the proposed project's maximum impact on pollutant concentrations and Air Quality Related Values (AQRV) at PSD Class I areas within 200 km of the Hosford Mill's location. The Bradwell Bay National Wilderness Area (BBNWA) and the St. Marks NWA (SMNWA), located 30 and 60 km, respectively, from the Hosford Mill location, are the only PSD Class I areas within 200 km of the mill site as shown in **Figure 1**. The following sections discuss the modeling methodology used for the analysis and the air modeling results.

SIGNIFICANT IMPACT ANALYSIS

If a major facility is located within 200 km of a PSD Class I area, then a significant impact analysis is performed to evaluate the impact due to a major modification (*i.e.*, project) alone at the PSD Class I area. Because PSD review is triggered only for PM_{10} and NO_x emissions, the Hosford Mill's maximum predicted PM_{10} and (nitrogen dioxide) NO_2 impacts at the BBNWA and SMNWA are compared to the respective PSD Class I significant impact levels (SIL) for PSD Class I areas. The PSD Class I PM_{10} SIL are 0.3 and 0.2 $\mu g/m^3$ for the 24-hour and annual averaging periods, respectively. The NO_2 SIL is 0.1 $\mu g/m^3$ for the annual averaging period. These recommended levels have never been promulgated as rules, but are the currently accepted criteria to determine whether a proposed project will incur a significant impact on a PSD Class I area. The predicted highest annual and highest short-term concentrations are compared to SIL.

PSD CLASS I INCREMENT ANALYSIS

For each pollutant for which a significant impact is predicted at the PSD Class I area, a full PSD Class I increment analysis is required. The PSD Class I increment analysis is a cumulative source analysis that evaluates whether the concentrations for all increment-affecting sources located within 200 km of a PSD Class I area will comply with the allowable PSD Class I increments. These concentrations include the impacts from PSD increment-affecting sources at the Hosford Mill and from PSD increment-affecting sources at other facilities. The predicted highest annual and highest, second-highest (H2H) 24-hour average concentrations are compared to the allowable PSD Class I increments to determined compliance.

MODEL SELECTION

Because the BBNWA lies entirely within 50 km of the Hosford Mill site, the Industrial Source Complex Short-term (ISCST) Model is used for predicting maximum pollutant concentrations for the significant impact analyses at that PSD Class I area.

As the SMNWR lies entirely beyond 50 km from a Hosford Mill site, the California Puff (CALPUFF) dispersion model, Version 5.7 (EPA, 2003), is the recommended model for use at that PSD Class I area by the EPA and the Federal Land Manager (FLM). Major features of the CALPUFF model are presented in Table E-1. The CALPUFF model is a long-range transport model applicable for estimating the air quality impacts in areas that are more than 50 km from a source. The CALPUFF model is maintained by the EPA on the SCRAM internet website. The methods and assumptions used in the CALPUFF model are based on the latest recommendations for modeling analysis as presented in the following reports:

- The Interagency Workgroup on Air Quality Models (IWAQM), *Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts* (EPA, 1998); referred to as the IWAQM Phase II report, and
- The *Federal Land Manager's Air Quality Relative Values Workgroup (FLAG) Phase I Report* (December, 2000), referred to as the FLAG document.

In addition, updates to the modeling methods and assumptions were followed based on discussion with the FLM, on recent analyses.

The ISCST model is the same as was used for the near-field modeling analyses. For the CALPUFF model, a more detailed description of the assumptions and methods used is presented below.

CALPUFF MODEL DESCRIPTION AND METHODOLOGY

INTRODUCTION

As part of the new source review requirements under PSD regulations, new major sources or major modifications to those sources are required to address air quality impacts at PSD Class I areas. As part of the PSD analysis report submitted to the Florida Department of Environmental Protection (DEP), the air quality impacts due to the potential emissions of the G-P Hosford Mill are required to be addressed at the

PSD Class I areas of the Bradwell Bay and St. Marks National Wilderness Areas (NWA). The Bradwell Bay and St. Marks NWAs are located approximately 30 and 60 km, respectively, from the G-P Hosford Mill. These are the only PSD Class I areas within 200 km of the mill.

This evaluation is concerned with determining compliance with the allowable PSD Class I increments. Compliance with PSD Class I increments can be evaluated by determining if the source's impacts are less than the proposed U.S. Environmental Protection Agency (EPA) Class I significant impact levels. The significant impact levels are threshold levels that are used to determine the type of air impact analyses needed for the facility. If the new or modified source's impacts are predicted to be less than significant, then the source's impacts are assumed not to have a significant adverse affect on air quality and additional modeling with other sources is not required. However, if the source's impacts are predicted to be greater than the significant impact levels, additional modeling with other sources is required to demonstrate compliance with Class I increments.

Currently there are several air quality modeling approaches recommended by the Interagency Workgroup on Air Quality Models (IWAQM) to perform these analyses. The IWAQM consists of EPA and Federal Land Managers (FLM) of Class I areas who are responsible for ensuring that AQRVs are not adversely impacted by new and existing sources. These recommendations have been
summarized in the documents referenced above

For the project, air quality analyses were performed that assess the Project's impacts in the PSD Class I areas of the St. Marks and Bradwell Bay NWA using the refined modeling approach from the IWAQM Phase 2 report for SO_2 and NO_2 PSD Class I increment analysis.

The refined analysis approach was used instead of the screening analysis approach since the air quality impacts are based on generally more realistic assumptions, include more detailed meteorological data, and are estimated at specific locations at the Class I area.

GENERAL AIR MODELING APPROACH

The general modeling approach was based on using the long-range transport model, California Puff model (CALPUFF, Version 5.7). At distances beyond 50 km, the ISCST3 model is considered to over-predict air quality impacts, because it is a steady-state model. At those distances, the CALPUFF model is recommended for use. The DEP has requested that air quality impacts for a source located more than 50 km from a Class I area be predicted using the CALPUFF model.

The methods and assumptions used in the CALPUFF model were based on the latest recommendations for a refined analysis as presented in the IWAQM Phase 2 Summary Report and the FLAG documents.

The following sections present the methods and assumptions used to assess the pollutant impacts for the Proposed Project.

MODEL SELECTION AND SETTINGS

The CALPUFF air modeling system was used to model to assess the proposed project's impacts at the PSD Class I area for comparison to the PSD Class I significant impact levels. CALPUFF is a non-steady state Lagrangian Gaussian puff long-range transport model that includes algorithms for building downwash effects as well as chemical transformations (important for visibility controlling pollutants), and wet/dry deposition. The CALPUFF meteorological and geophysical data preprocessor (CALMET, Version 5.5), a preprocessor to CALPUFF, is a diagnostic meteorological model that produces a three-dimensional field of wind and temperature and a two-dimensional field of other meteorological parameters. CALMET was designed to process raw meteorological, terrain and land-use databases to be used in the air modeling analysis. The CALPUFF modeling system uses a number of FORTRAN preprocessor programs that extract data from large databases and converts the data into formats suitable for input to CALMET. The processed data produced from CALMET was input to CALPUFF to assess the pollutant specific impact. Both CALMET and CALPUFF were used in a manner that is recommended by the IWAQM Phase 2 and FLAG reports.

CALPUFF MODEL APPROACHES AND SETTINGS

The IWAQM has recommended approaches for performing a Phase 2 refined modeling analyses that are presented in Table E-2. These approaches involve use of meteorological data, selection of receptors and dispersion conditions, and processing of model output.

The specific settings used in the CALPUFF model are presented in Table E-3.

EMISSION INVENTORY AND BUILDING WAKE EFFECTS

The CALPUFF model included the project's emission, stack, and operating data as well as building dimensions to account for the effects of building-induced downwash on the emission sources. Dimensions for all significant building structures were processed with the Building Profile Input Program (BPIP), Version 95086, and were included in the CALPUFF model input. Attachment F presents a listing of the facility's emissions and structures included in the analysis.

RECEPTOR LOCATIONS

Maximum pollutant concentrations were predicted using 132 and 101 discrete receptors located at the BBNWA and SMNWA, respectively. These receptors were obtained from the National Park Service (NPS) on a CD using the extraction software provided by the NPS. Because the NPS receptors include elevations above mean sea level, facility elevations were included for the Hosford Mill and other facilities. An elevation of zero was assumed for facilities located near the coastal areas of the Gulf of Mexico.

METEOROLOGICAL DATA

For the ISCST modeling analysis, a 5-year meteorological data set is used, consisting of hourly surface data from Tallahassee and twice daily mixing height data from Apalachicola. The period of record is from 1987 to 1991. These are the same meteorological data that are used for the near-field impact assessment.

CALMET, the meteorological preprocessor to CALPUFF, was used to develop a 3-dimensional wind field necessary to perform the CALPUFF air modeling analyses. The modeling domain consisted of a rectangular 3-dimensional grid that extends from approximately 87.5 to 81.5 degrees longitude and from 29.25 to 31.9 degrees latitude. The domain size is 532 km in the east-west direction by 300 km in the north-south direction. The modeling domain includes the following meteorological and land use parameters:

- Surface weather data;
- Upper air data;
- A 1-degree land use data;
- A 1-degree Digital Elevation Model (DEM) terrain data;

- Mesoscale Model - Generation 4 (MM4) data (for initializing the wind field) for 1990; MM5 data for 1992 and 1996; and
- Hourly precipitation data.

These data were obtained and processed for the calendar years 1990, 1992, and 1996, the years for which MM4 and MM5 data are available on CD. The CALMET wind field and the CALPUFF model options used were consistent with the suggestions of the FLMs. Meteorological data used with the CALPUFF model consist of a CALMET-developed wind field covering panhandle Florida. More detailed descriptions of the assumptions and methods used for processing the meteorological data and establishing the model domain are presented below.

METEOROLOGICAL DATA

REFINED ANALYSIS

CALMET was used to develop the gridded parameter fields required for the refined modeling analyses. The follow sections discuss the specific data used and processed in the CALMET model.

CALMET SETTINGS

The CALMET settings contained in Table E-4 were used for the refined modeling analysis.

MODELING DOMAIN

A rectangular modeling domain extending 532 km in the east-west (x) direction and 300 km in the north-south (y) direction was used for the refined modeling analysis. The southwest corner of the rectangle, the origin of the modeling domain, is located at 29.25 N degrees latitude and 87.5 W degrees longitude. This location is in the Gulf of Mexico approximately 190 km south of the Alabama-Florida border. For the processing of meteorological and geophysical data, the domain contains 133 grid cells in the x-direction and 75 grid cells in the y-direction. The domain grid resolution is 4 km. The air modeling analysis was performed in the UTM coordinate system and based on Zone 16.

MESOSCALE MODEL – GENERATION 4 AND 5 (MM4/MM5) DATA

Pennsylvania State University in conjunction with the NCAR Assessment Laboratory developed the MM4 and MM5 datasets, prognostic wind fields or "guess" fields, for the United States. The hourly meteorological variables used to create these datasets (wind, temperature, dew point depression, and geopotential height for eight standard levels and up to 15 significant levels) are extensive and have been developed for the MM4 data for 1990 and the MM5 data for 1992, and 1996. The analysis used the MM4 and MM5 data to initialize the CALMET wind field. The 1990 MM4 and 1992 MM5 data have horizontal spacing of 80 km while the 1996 MM5 data have horizontal spacing of 36 km. These data are used to simulate atmospheric variables within the modeling domain.

The 1990 MM4 and 1992 MM5 subsets consisted of an 11 x 8-cell rectangle, 80-km resolution extending from the grid points (44,12) to (54,19). These data were processed to create MM4.DAT or MM5.DAT files for input to the CALMET model. The 1996 MM5 subset consisted of a 20 x 16-cell rectangle, 36-km resolution extending from the grid points (113,29) to (132,44). These data were processed to create a MM5.DAT file for input to the CALMET model. The 1990 MM4 data were obtained from the National Climatic Data Center, while the 1992 and 1996 MM5 data were obtained from the National Park Service.

The MM4 and MM5 data set used in the CALMET, although advanced, lacks the fine detail of specific temporal and spatial meteorological variables and geophysical data. These variables were processed into the appropriate format and introduced into the CALMET model through the additional data files obtained from the following sources.

SURFACE DATA STATIONS AND PROCESSING

The surface station data processed for the CALPUFF analyses consisted of data from up to eight available NWS stations or Federal Aviation Administration (FAA) Flight Service stations for Jacksonville, Gainesville, Pensacola and Tallahassee, Florida; Columbus, and Macon, Georgia; and Mobile and Montgomery, Alabama. For 1996 only, an additional six surface stations were included from Integrated Surface Hourly (ISH) data for secondary and military airports. A summary of the surface station information and locations are presented in Table E-5. The surface station parameters include wind speed, wind direction, cloud ceiling height, opaque cloud cover, dry bulb temperature, relative humidity, station pressure, and a precipitation code that is based on current weather conditions. The surface station data were processed into CALMET input using the utility program SMERGE.

Because the modeling domain extends largely over water, C-Man station data from Cape San Blas, Florida were obtained. These data were processed into an over-water surface station format (*i.e.*, `SEA*.DAT) for input to CALMET. The over-water station data include wind direction. wind speed and air temperature.

UPPER AIR DATA STATIONS AND PROCESSING

The analysis included up to four available upper air NWS stations located in Apalachicola. Tallahassee. and Ruskin. Florida; Waycross. Georgia; and Centerville. Alabama. Data for each station were processed into CALMET input format using the utility program READ62. The data and locations for the upper air stations are presented in Table E-5.

PRECIPITATION DATA STATIONS AND PROCESSING

Precipitation data were processed from a network of hourly precipitation data files collected from primary and secondary NWS precipitation-recording stations located within the latitude and longitudinal limits of the modeling domain. Data for up to 57 stations were obtained in NCDC TD-3240 variable format and converted into a fixed-length format. The utility programs PXTRACT and PMERGE were then used to process the data into the format for the PRECIP.DAT file that is used by CALMET. A listing of the precipitation stations used for the modeling analysis is presented in Table E-6.

GEOPHYSICAL DATA PROCESSING

Terrain elevations for each grid cell of the modeling domain were obtained from 1-degree Digital Elevation Model (DEM) files obtained from the U.S. Geographical Survey (USGS) internet website. The DEM data was extracted for the modeling domain grid using the utility program TERREL. Land-use data were also extracted from 1-degree USGS files and processed using utility programs CTGCOMP and CTGPROC. Both the terrain and land use files were combined into a GEO.DAT file for input to CALMET with the MAKEGEO utility program.

<u>EMISSION INVENTORY</u>

G-P HOSFORD MILL

The maximum emissions, stack physical data. and operating data for the Hosford Mill sources are summarized in Table E-7. The emission rates are presented for the future PM_{10} and NO_x and SO2 emissions after the proposed modification. These emissions are the same as what was used for the near-field modeling analysis. For the PSD Class I increment analyses. all sources at the Hosford Mill were co-located at the facility's UTM East and North coordinates of 713.5 and 3.369.5 km. respectively. in

UTM Zone 16. Fugitive emissions were combined into one volume source with a plant-wide average release height of 11.95 ft. All fugitive PM_{10} emissions from roadway sources that were used in the near-field modeling analysis were combined into one road emission volume source with the same hourly emissions factors.

BACKGROUND FACILTIES

An emission inventory of background PSD-affecting sources were developed for all pollutants that the project's impacts were predicted to be greater than the SIL at a PSD Class I area. The background source inventories were derived and updated from the previous air modeling studies performed for the Stone Container Corporation's Panama City Mill (2000, 2002) and for the City of Tallahassee's Purdom Plant (1999). These inventories were developed from source information provided by the FDEP and from discussions with FDEP State and Regional Office personnel.

A summary of all nearby background facilities, their locations with respect to the Hosford Mill, and their allowable PM_{10} emission rates is provided in Table E-8. Facilities that affect the allowable PSD increment were included in the PSD Class I increment analysis. These facilities include the City of Tallahassee's Hopkins and Purdom power plants, the Bay County Energy Systems facility, the Stone Container Corporation's mill, Florida Coast Paper's facility, which has shutdown, and the Englehard Corporation in Decatur County, Georgia.

The individual source emission, stack, and operating parameters for PM_{10} increment-affecting sources incorporated in the PSD Class I increment analysis are presented in Table E-9.

BUILDING DOWNWASH EFFECTS

The building dimensions considered in the air modeling analysis for the Hosford Mill sources in the near-field modeling analysis were used for the PSD Class I impact assessment. All direction-specific building parameters were calculated with EPA's Building Profile Input Program (BPIP), Version 95086.

RECEPTOR LOCATIONS

Maximum pollutant concentrations were predicted using 132 and 101 discrete receptors located at the BBNWA and SMNWA, respectively. These receptors were obtained from the National Park Service (NPS) on a CD using the extraction software provided by the NPS. Because the NPS receptors include elevations above mean sea level, facility elevations were included for the Hosford Mill and other facilities. An elevation of zero was assumed for facilities located near the coastal areas of the Gulf of Mexico.

Table E-1. Major Features of the CALPUFF Model, Version 5.7

CALPUFF Model Features
• Source types: Point, line (including buoyancy effects), volume, area (buoyant, non-buoyant)
• Non-steady-state emissions and meteorological conditions (time-dependent source and emission data; gridded 3-dimensional wind and temperature fields; spatially-variable fields of mixing heights, friction velocity, precipitation, Monin-Obukhov length; vertically and horizontally-varying turbulence and dispersion rates; time-dependent source and emission data for point, area, and volume sources; temporal or wind-dependent scaling factors for emission rates)
• Efficient sampling function (integrated puff formulation; elongated puff (slug) formation)
• Dispersion coefficient options (Pasquill-Gifford (PG) values for rural areas; McElroy-Pooler values (MP) for urban areas; CTDM values for neutral/stable; direct measurements or estimated values)
• Vertical wind shear (puff splitting; differential advection and dispersion)
• Plume rise (buoyant and momentum rise; stack-tip effects; building downwash effects; partial plume penetration above mixing layer)
• Building downwash effects (Huber-Snyder method; Schulman-Scire method)
• Complex terrain effects (steering effects in CALMET wind field; puff height adjustments using ISC model method or plume path coefficient; enhanced vertical dispersion used in CTDMPLUS)
• Subgrid scale complex terrain (CTSG option) (CTDM flow module; dividing streamline as in CTDMPLUS)
• Dry deposition (gases and particles; options for diurnal cycle per pollutant, space and time variations with a resistance model, or none)
• Overwater and coastal interaction effects (overwater boundary layer parameters; abrupt change in meteorological conditions, plume dispersion at coastal boundary; fumigation; option to use Thermal Internal Boundary Layers (TIBL) into coastal grid cells)
• Chemical transformation options (Pseudo-first-order chemical mechanisms for SO_2, SO_4, HNO_3, and NO_3; Pseudo-first-order chemical mechanisms for SO_2, SO_4, NO, NO_2, HNO_3, and NO_3 (RIVAD/ARM3 method); user-specified diurnal cycles of transformation rates; no chemical conversions)
• Wet removal (scavenging coefficient approach; removal rate as a function of precipitation intensity and type)
• Graphical user interface
• Interface utilities (scan ISC-PRIME and AUSPLUME meteorological data files for problems; translate ISC-PRIME and AUSPLUME input files to CALPUFF input files)

Note: CALPUFF = California Puff Model

Source: EPA, 2003.

Table E-2. Refined Modeling Analyses Recommendations [a]

Model Input/Output	Description
Meteorology	Use CALMET (minimum 6 to 10 layers in the vertical: top layer must extend above the maximum mixing depth expected): horizontal domain extends 50 to 80 km beyond outer receptors and sources being modeled: terrain elevation and land-use data is resolved for the situation.
Receptors	Within Class I area(s) of concern: obtain regulatory concurrence on coverage.
Dispersion	1. CALPUFF with default dispersion settings. 2. Use MESOPUFF II chemistry with wet and dry deposition. 3. Define background values for ozone and ammonia for area.
Processing	1. For PSD increments: use highest, second highest 3-hour and 24-hour average SO_2 concentrations; highest, second highest 24-hour average PM_{10} concentrations; and highest annual average SO_2, PM_{10} and NO_x concentrations. 2. For haze: process, on a 24-hour basis, compute the source extinction from the maximum increase in emissions of SO_2, NO_x and PM_{10}; compute the daily relative humidity factor [f(RH)], provided from an external disk file; and compute the maximum percent change in extinction using the FLM supplied background extinction data in the FLAG document. 3. For significant impact analysis: use highest annual and highest short-term averaging time concentrations for SO_2, PM_{10} and NO_x.

[a] IWAQM Phase II report (December, 1998) and FLAG document (December, 2000)

Table E-3. CALPUFF Model Settings

Parameter	Setting
Pollutant Species	SO_2, SO_4, NO_x, HNO_3, NO_3, PM_{10}
Chemical Transformation	MESOPUFF II scheme, hourly ozone data
Deposition	Include both dry and wet deposition, plume depletion
Meteorological/Land Use Input	CALMET
Plume Rise	Transitional, Stack-tip downwash, Partial plume penetration
Dispersion	Puff plume element, PG /MP coefficients, rural mode, ISC building downwash scheme
Terrain Effects	Partial plume path adjustment
Output	Create binary concentration file including output species for SO_4, NO_3, PM_{10}, SO_2, and NO_x; process for visibility change using Method 2 and FLAG background extinctions
Model Processing	For haze: highest predicted 24-hour extinction change (%) for the year For deposition: annual average deposition rate For significant impact analysis: highest predicted annual and highest short-term averaging time concentrations for SO_2, NO_x, and PM_{10}.
Background Values	Ozone: 50 ppb; Ammonia: 1 ppb[a]

[a] Recommended values by the Florida DEP.

Table E-4. CALMET Settings

Parameter	Setting
Grid Southwest Corner	UTM East- 452 km
	UTM North- 3.236 km
	UTM Zone- 16
Horizontal Grid Dimensions	532 km by 300 km. 4 km grid resolution
Vertical Grid	10 layers
Weather Station Data Inputs	8 surface, 4 upper air, 57 precipitation stations
Wind model options	Diagnostic wind model, no kinematic effects
Prognostic wind field model	1990 MM4 data and 1992 MM5 data, 80 km resolution; 1996 MM5 data, 36 km resolution; used for wind field initialization
Output	Binary hourly gridded meteorological data file for CALPUFF input

Table E-5 Surface, Over Water, and Upper Air Stations Used in the Refined Modeling Analysis

Station Name		Station Symbol	WBAN Number	UTM Coordinate Easting (km)		UTM Coordinate Northing (km)	UTM Coordinate Zone	Anemometer Height	Time Zone[b]
Surface Stations									
Jacksonville, FL		JAX	13889	1012.82	a	3374.19	17	6.1	5
Tallahassee, FL		TLH	93805	753.04	a	3363.99	16	7.6	5
Tampa, FL		TPA	12842	929.17	a	3094.25	17	6.7	5
Columbus, GA		CSG	93842	692.57	a	3599.35	16	9.1	5
Macon, GA		MCN	3813	831.58	a	3620.93	17	7.0	5
Mobile, AL		MOB	13894	380.26		3394.97	16	10.1	6
Montgomery, AL		MGM	13895	556.50		3573.65	16	7.0	6
Gainesville, FL		GNV	12816	957.43	a	3284.16	17	6.7	5
Albany, GA	c	ALB	13869	767.40	a	3492.00	17	10	5
Blountown, FL	c	CSB	3824	688.80		3372.00	16	10	6
Dothan, AL	c	DOT	93843	649.20		3436.30	16	10	6
Tyndall AFB, FL	c	TYN	13846	636.60		3326.80	16	10	6
Valpariso, FL	c	VAL	3852	530.40		3364.80	16	10	6
Valdosta, GA	c	VLD	13857	863.00	a	3431.90	17	10	5
Over water Stations									
Cape San Blas, FL		CSBF1	-	659.04		3283.32	16	9.8	6
Upper Air Stations									
Ruskin, FL		TBW	12842	941.95	a	3064.55	17	NA	5
Waycross, GA		AYS	13861	946.68	a	3457.95	17	NA	5
Tallahassee, FL		TLH	93805	753.04		3363.99	17	NA	5
Centerville, AL		CKL	3881	476.62		3640.04	17	NA	6
Apalachicola, FL		AQQ	12832	690.22	a	3290.65	17	NA	5

[a] Equivalent UTM Coordinate for Zone 16

[b] Eastern = 5, Central = 6

[c] Used for 1996 only.

Table E-6. Hourly Precipitation Stations Used in the Refined Modeling Analysis

Station Name	Station Number	UTM Coordinate Easting (km)	UTM Coordinate Northing (km)	UTM Coordinate Zone	Station Name	Station Number	UTM Coordinate Easting (km)	UTM Coordinate Northing (km)	UTM Coordinate Zone
Florida					Georgia				
Apalachicola WSO Arpt	80211	691.061	3289.921	16	Abbeville 4 S	90010	861.839 [a]	3535.687	17
Blackman	80765	533.424	3427.601	16	Americus Exp Stn Nurser	90258	757.935	3554.581	16
Branford	80975	895.606 [a]	3315.955	17	Bainbridge Intl Paper Co	90586	724.846	3409.588	16
Bristol	81020	693.715	3366.473	16	Brunswick	91340	1032.132 [a]	3448.130	17
Cross City 2 WNW	82008	870.268 [a]	3281.754	17	Claxton	91973	995.054 [a]	3559.185	17
Dowling Park 1 W	82391	863.505 [a]	3348.418	17	Columbus Metro Ap	92166	693.300	3599.307	16
Gainesville 11 WNW	83322	935.411 [a]	3284.205	17	Coolidge	92238	806.336	3434.765	17
Graceville 1 SW	83538	641.703	3424.797	16	Doles	92728	806.730 [a]	3510.587	17
Inglis 3 E	84273	922.631 [a]	3211.652	17	Dublin 2	92844	901.605 [a]	3603.714	17
Jacksonville WSO AP	84358	1013.427 [a]	3373.634	17	Edison	93028	715.132	3494.426	16
Lynne	85237	989.255 [a]	3230.295	17	Fargo	93312	930.278 [a]	3396.112	17
Monticello 3 W	85879	800.168 [a]	3381.291	17	Folkston 3 SW	93460	982.591 [a]	3407.519	17
Niceville	86240	548.745	3377.572	16	Hamilton 4 W	94033	693.630	3625.258	16
Panacea 3 S	86828	752.453	3319.607	16	Hazlehurst	94204	930.478 [a]	3528.882	17

Table E-6. Continued

Station Name	Station Number	UTM Coordinate Easting (km)		Northing (km)	Zone
Panama City 5 NE	86842	634.754		3343.414	16
Raiford State Prison	87440	965.020	[a]	3326.686	17
Tallahassee WSO AP	88758	754.292		3365.100	16
Wausau	89415	635.756		3391.462	16
Woodruff Dam	89795	704.292		3399.935	16
Alabama					
Abbeville 1 NNW	10008	662.902		3495.325	16
Alberta	10140	459.798		3566.793	16
Andalusia 3 W	10252	545.472		3463.482	16
Atmore State Nursery	10402	458.171		3448.658	16
Auburn Agronomy Farm	10430	640.773		3607.735	16
Dadeville 2	12124	617.060		3633.087	16
Dothan	12377	652.449		3452.663	16
Enterprise 5 NNW	12675	604.606		3472.403	16
Greenville	13519	533.119		3523.197	16
Marion 7 NE	15112	474.872		3618.169	16
Midway	15397	639.828		3549.782	16
Montgomery Dannelly Field	15550	555.790		3573.610	16
Peterman	16370	474.564		3494.634	16
Thorsby Exp Station	18209	530.782		3642.236	16

Station Name	Station Number	UTM Coordinate Easting (km)		Northing (km)	Zone
Jesup	94671	996.541	[a]	3497.124	17
Lizella	95249	815.936	[a]	3633.385	17
Lumpkin 2 SE	95394	710.020		3545.778	16
Macon Middle GA Regional	95443	831.127	[a]	3619.583	17
Pearson	96879	904.643	[a]	3463.307	17
Sylvania 2 SSE	98517	1022.108	[a]	3621.570	17
The Rock	98657	757.814		3650.455	16
Valdosta 4 NW	98974	856.902	[a]	3416.946	17
West Point	99291	669.434		3638.065	16

Troy	18323	597.296	3519.354	16

[a] Equivalent UTM Easting Coordinate shown is for Zone 16: G-P translated original easting in Zone 17.

IDENTIFICATION OF AQRVS AND METHODOLOGY

An AQRV analysis was conducted to assess the potential risk to AQRVs of the SMNWA and BBNWA due to future G-P Hosford Mill emissions. The U.S. Department of the Interior in 1978 administratively defined AQRVs to be:

> *All those values possessed by an area except those that are not affected by changes in air quality and include all those assets of an area whose vitality, significance, or integrity is dependent in some way upon the air environment. These values include visibility and those scenic, cultural, biological, and recreational resources of an area that are affected by air quality.*
>
> *Important attributes of an area are those values or assets that make an area significant as a national monument, preserve, or primitive area. They are the assets that are to be preserved if the area is to achieve the purposes for which it was set aside (Federal Register, 1978).*

Except for visibility, AQRVs were not specifically defined. However, odor, soil, flora, fauna, cultural resources, geological features, water, and climate generally have been identified by land managers as AQRVs. Since specific AQRVs have not been identified for the SMNWA and BBNWA, this AQRV analysis evaluates the effects of air quality on general vegetation types and wildlife found in those areas.

Vegetation type AQRVs and their representative species types have been defined by the U.S. Fish and Wildlife as:

- Marshlands - black needlerush, saw grass, salt grass, and salt marsh cordgrass
- Marsh Islands - cabbage palm and eastern red cedar
- Estuarine Habitat - black needlerush, salt marsh cordgrass, and wax myrtle
- Hardwood Swamp - red maple, red bay, sweet bay, and cabbage palm
- Upland Forests - live oak, scrub oak, longleaf pine, slash pine, wax myrtle, and saw palmetto
- Mangrove Swamp - red, white, and black mangrove

Wildlife AQRVs have been identified as endangered species, waterfowl, marsh and waterbirds, shorebirds, reptiles, and mammals.

IMPACTS UPON VISIBILITY

INTRODUCTION

The CAA Amendments of 1977 provide for implementation of guidelines to prevent visibility impairment in mandatory Class I areas. The guidelines are intended to protect the aesthetic quality of these pristine areas from reduction in visual range and atmospheric discoloration due to various pollutants. Sources of air pollution can cause visible plumes if emissions of PM_{10} and NO_x are sufficiently large. A plume will be visible if its constituents scatter or absorb sufficient light so that the plume is brighter or darker than its viewing background (*e.g.*, the sky or a terrain feature, such as a mountain). PSD Class I areas, such as national parks and wilderness areas, are afforded special visibility protection designed to prevent plume visual impacts to observers within a Class I area.

Visibility is an AQRV for the SNNWA but not for the BBNWA. Visibility can take the form of plume blight for nearby areas or regional haze for long distances (*e.g.*, distances beyond 50 km). Because the SMNWA is greater than 50 km from the Hosford Mill, the potential change in visibility is analyzed as regional haze.

Currently, there are several air quality modeling approaches recommended by the Interagency Workgroup on Air Quality Models (IWAQM) to perform these analyses. The IWAQM consists of EPA and FLM of Class I areas that are responsible for ensuring that AQRVs are not adversely impacted by new and existing sources. These recommendations have been summarized in the IWAQM Phase 2 report and the FLAG document discussed earlier. The methods and assumptions recommended in these documents were used to assess visibility impairment due to the project.

ANALYSIS METHODOLOGY

Based on the FLAG document, current regional haze guidelines characterize a change in visibility by the change in the light-extinction coefficient (b_{ext}). The b_{ext} is the attenuation of light per unit distance due to the scattering and absorption by gases and particles in the atmosphere. A change in the extinction coefficient produces a perceived visual change. An index that simply quantifies the percent change in visibility due to the operation of a source is calculated as:

$$\Delta\% = (b_{exts} / b_{extb}) \times 100$$

where: b_{exts} is the extinction coefficient calculated for the source, and

b_{extb} is the background extinction coefficient.

The purpose of the visibility analysis is to calculate the extinction at each receptor for each day (24-hour period) of the year due to the proposed project. The criteria to determine if the project's impacts are potentially significant are based on a change in extinction of 5 percent or greater for any day of the year.

Processing of visibility impairment for this study was performed with the CALPUFF model and the CALPUFF post-processing programs POSTUTIL and CALPOST. The analysis was conducted in accordance with the most recent guidance from the FLAG document (December 2000). The CALPOST program is used to calculate the combined visibility effects from the different pollutants that are emitted from the Project. Daily background extinction coefficients are calculated on an hour-by-hour basis using hourly relative humidity data from CALMET and hygroscopic and non-hygroscopic extinction components specified in the FLAG document. For the Class I area evaluated, the hygroscopic and non-hygroscopic components are 0.9 and 8.5 inverse mega meter (Mm^{-1}). The CALPOST program then predicts the percent extinction change for each day of the year.

NITROGEN AND SULFUR DEPOSITION

As part of the AQRV analyses, total nitrogen (N) and total sulfur (S) deposition rates are predicted at all evaluated PSD Class I areas. However, since the Hosford's Mill's SO_2 emissions do not trigger PSD review, this analysis was performed for only total N deposition. The N deposition analysis threshold is based on the annual averaging period. The total N deposition is estimated in units of kilogram per hectare per year (kg/ha/yr). The CALPUFF model is used to predict wet and dry deposition fluxes of various oxides of these elements.

For N deposition, the species include:

- Particulate ammonium nitrate (from species NO_3), wet and dry deposition;
- Nitric acid (species HNO_3), wet and dry deposition;
- NO_x, dry deposition; and
- Ammonium sulfate (species SO_4), wet and dry deposition.

The CALPUFF model produces results in units of μg/m²/s. The modeled deposition rates are then converted to deposition in kg/ha respectively, by using a multiplier equal to the ratio of the molecular weights of the substances (IWAQM Phase II report Section 3.3).

The deposition analysis threshold (DAT) for nitrogen of 0.01 kg/ha/yr was provided by the U.S. Fish and Wildlife Service (January 2002). A DAT is the additional amount of N deposition within a Class I area, below which estimated impacts from a proposed new or modified source are considered insignificant. The maximum N deposition predicted for the Hosford Mill's proposed emissions is, therefore, compared to this DAT or significant impact level.

MODELING RESULTS

SIGNFICIANT IMPACT ANALYSIS

A summary of the maximum predicted PM_{10} and NOx impacts at the BBNWA due to the Hosford Mill only are summarized in Table E-10. The maximum predicted 24-hour PM_{10} concentrations are predicted to be greater than the proposed Class I SIL while predicted NOx concentrations are less than the SIL. A summary of the maximum predicted PM_{10} and NOx impacts at the SMNWA due to the Hosford Mill only are summarized in Table E-11. All predicted concentrations at the SMNWA are below the SIL. For completeness, however, the cumulative PM_{10} PSD Class I increment analysis was performed for both PSD Class I areas.

PSD CLASS I INCREMENT ANALYSIS

The predicted highest annual and HSH 24-hour average PM_{10} PSD Class I increment for each year modeled is summarized in Table E-12. The maximum predicted annual PSD Class I increment consumption is less than zero μg/m³, implying that the PSD increment has expanded since the PSD baseline year. Therefore, it is well below the allowable PSD Class I increment of 1 μg/m³. The HSH predicted 24-hour average PSD increment consumption is 0.531 μg/m³ at the BBNWA, which is well below the allowable 24-hour PSD Class I increment of 5 μg/m³.

MAXIMUM AQRV CONCENTATIONS

Table E-13 presents the AQRV concentrations for both the SMNWA and BBNWA. For each emitted pollutant, concentrations are presented by averaging time.

MAXIMUM VISIBILITY DEGRADATION

The visibility modeling results for the SMNWA are presented in Table E-14. The maximum predicted 24-hour change in background extinction coefficient is 4.28 percent. As this percentage is below the criteria value of 5 percent, it is concluded that the Hosford Mill's future emissions will not significantly affect the background visibility levels at the SMNWA PSD Class I area.

TOTAL NITROGEN ANNUAL DEPOSITION

The maximum predicted nitrogen (N) annual deposition for the Hosford Mill at the SMNWA and BBNWA PSD Class I areas is summarized in Table E-15. The maximum predicted N deposition at the SMNWA and BBNWA is predicted to be 0.0021 and 0.0021 kilogram per hectare per year (kg/ha/yr), respectively, which is below the DAT of 0.01 kg/ha/yr.

Table E-7. Emission, Stack and Operating Data, G-P Hosford							
Emission Point	Source	Airflow acfm	Stack Height (ft)	Stack Diamater (inches)	PM10 lb/hr	NOx lb/hr	SO2 lb/hr
EP_1 A	Dryer RTO 1	171,000	180	102	21.3	37.9	3.5
EP_1 B	Dryer RTO 2	171,000	180	102	21.3	37.9	3.5
EP_2	Press RTO	146,000	100	80	3.61	13.5	0
EP_3	Screen Fines/Saw Trim Baghouse CP-003	13,940	132	25	2.6		
EP_4	Saw Trim/Finishing Line Baghouse CP-001	31,360	100	38	1.34		
EP_5	Mat Reject/Flying Saw Baghouse CP-005	53,320	132	48	2.3		
EP_6	Specialty Saw/Sander Baghouse 1 CP-006-1	25,860	90	34	2.2		
EP_7	Fuel Handling System Baghouse CP-006-2	480	75	10	0.4		
EP_8	Forming Bins Baghouse CP-002	22,940	105	30	1.96		
EP_9	Hammermill/Dry Fuel System Baghouse	15,000	132	26	2.65		
EP_10	Thermal Oil Heater	29,800	138	66	8	6	0.03

Table E-8. Summary of Competing PM Facilities Considered for Inclusion in the AAQS and PSD Class I and Class II Air Modeling Analyses

Facility ID Number	Facility	County	UTM Coordinates East (km)	UTM Coordinates North (km)	Relative to G-P Hosford X (km)	Relative to G-P Hosford Y (km)	Relative to G-P Hosford Distance (km)	Relative to G-P Hosford Direction[a] (deg)	Maximum PM Emissions (TPY)	Q, Emission Threshold (Distance-6) x 20	Include in Modeling Analysis ?
7300003	City of Tallahassee - Hopkins	Leon	749.5	3371.7	35.7	2.2	35.8	86	788	596.0	YES
1290001	City of Tallahassee - Purdom	Wakulla	769.5	3340.0	55.7	-29.5	63.0	118	463	1140.6	YES[a]
0050031	Bay County Energy Systems	Bay	644.0	3348.9	-69.8	-20.6	72.8	254	60	1335.5	YES[a]
0050038	Triangle Construction	Bay	638.8	3347.0	-75.0	-22.5	78.3	253	12	1446.0	NO
0450001	Premier Refractories, Inc	Gulf	664.7	3302.8	-49.1	-66.7	82.8	216	345	1536.5	NO
0050008	G.A.C. Contractors	Bay	634.9	3343.7	-78.9	-25.8	83.0	252	44	1540.2	NO
0450002	Sylvachem	Gulf	663.4	3299.6	-50.4	-69.9	86.2	216	71	1603.5	NO
0450005	Florida Coast Paper	Gulf	662.8	3299.0	-51.0	-70.5	87.0	216	0	1620.3	YES[a]
0050001	Arizona Chemical Company	Bay	633.1	3335.4	-80.7	-34.1	87.6	247	153	1632.2	NO
0050009	Stone Container Corporation	Bay	632.8	3335.1	-81.0	-34.4	88.0	247	1,940	1640.0	YES[a]
0050005	Florida Asphalt Paving	Bay	631.4	3338.3	-82.4	-31.2	88.1	249	29	1642.2	NO
0050014	Gulf Power	Bay	625.2	3349.1	-88.6	-20.4	90.9	257	1,814	1698.4	NO
1330002	Florida Asphalt Paving	Washington	624.4	3399.8	-89.4	30.3	94.4	289	44	1767.9	NO
0050028	Louisiana Pacific	Bay	608.8	3355.2	-105.0	-14.3	106.0	262	37	1999.4	NO
1310019	Perdue Farms	Walton	590.1	3399.3	-123.7	29.8	127.2	284	87	2424.8	NO
	Englehard Corporation	Decatur, GA	739.9	3402.8	26.1	33.3	42.3	38	72	726.0	YES[a]
G-P Hosford OSB Mill is at UTM location:			713.8	3369.5							

[a] Facility was included in the air modeling analysis because it affects the PSD increment

Note: The G-P Hosford Mill is significant to 6 km.

Table E-9. Summary of Background PM Sources Included in the Air Modeling Analysis

Facility ID Number	Facility	Units	ID Name	Stack Parameters: Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	PSD Source? (EXP/CON)	Modeled in: AAQS	Class II	Class I	
0050031	Bay County Energy Systems												
		Boilers No. 1 and 2	BAYENRGY	38.1	1.37	477.6	17.50	1.72	CON	No	No	Yes	PSD
	Stone Container Corporation												
		No. 1 Recovery Boiler	SCRB1	71.0	1.96	421.0	28.50	11.00	CON	No	No	Yes	
		No. 2 Recovery Boiler	SCRB2	71.0	1.96	428.0	27.48	11.00	CON	No	No	Yes	
		No. 1 Smelt Dissolving Tank	SCSDT1	71.0	1.83	347.4	5.25	3.35	CON	No	No	Yes	
		No. 2 Smelt Dissolving Tank	SCSDT2	71.0	1.83	347.4	4.56	3.21	CON	No	No	Yes	
		Lime Kiln	SCLK1	18.6	2.44	347.4	11.84	3.69	CON	No	No	Yes	
		No. 3 Combination Boiler	SCBB3	64.9	2.39	337.4	30.41	12.32	CON	No	No	Yes	
		No. 4 Combination Boiler	SCBB4	64.9	2.39	335.0	32.29	10.27	CON	No	No	Yes	
		Lime Slaker	SCLSKR	17.1	0.88	366.5	13.09	0.693	CON	No	No	Yes	
		Woodyard[a]	WOODYARD					0.47	CON	No	No	Yes	
		No. 1 Recovery Boiler	SCRB1b	71.0	1.96	428.0	26.82	-5.78	EXP	No	No	Yes	
		No. 2 Recovery Boiler	SCRB2b	71.0	1.96	433.0	24.78	-6.59	EXP	No	No	Yes	
		No. 1 Smelt Dissolving Tank	SCSDT1b	71.0	1.83	339.0	51.50	-0.50	EXP	No	No	Yes	
		No. 2 Smelt Dissolving Tank	SCSDT2b	71.0	1.83	333.0	5.30	-2.48	EXP	No	No	Yes	
		Lime Kiln	SCLK1b	18.6	2.44	344.0	10.24	-3.04	EXP	No	No	Yes	
		Power Boiler No. 4 & 5	SCPB45b	90.2	3.66	478.0	7.56	-3.04	EXP	No	No	Yes	
		No. 6 Power Boiler	SCPB6b	73.5	2.44	494.0	10.85	-3.81	EXP	No	No	Yes	
		No. 3 Combination Boiler	SCBB3b	45.7	2.59	500.0	23.50	-17.65	EXP	No	No	Yes	
		No. 4 Combination Boiler	SCBB4b	45.7	2.24	516.0	27.32	-17.65	EXP	No	No	Yes	
		Lime Slaker	SCLSKRb	17.1	0.88	344.0	13.44	-0.63	EXP	No	No	Yes	
0050005	Florida Coast Paper												
		Kiln #1		33.8	1.22	352.6	20.78	-1.30	EXP				
		Kiln #2		33.8	1.22	352.6	19.85	-1.30	EXP				
		Kiln #3		33.5	1.22	352.6	18.31	-1.30	EXP				
		Slaker A		12.2	0.76	355.4	1.45	-3.23	EXP				
		Slaker B		12.2	0.76	355.4	1.45	-3.23	EXP				
		Smelt Dissolving Tank No. 5		38.1	1.07	360.4	7.71	-0.71	EXP				
		Smelt Dissolving Tank No. 6		38.1	1.07	355.4	7.71	-0.71	EXP				
		Smelt Dissolving Tank No. 7		30.5	2.38	367.6	2.25	-2.51	EXP				
			FCPLKSDT	30.5	2.38	367.6	2.25	-14.29		No	No	Yes	
		Recovery Boiler #5		38.1	2.56	460.9	14.81	-4.72	EXP				
		Recovery Boiler #7		38.1	2.56	394.3	2.94	-4.72	EXP				
		Recovery Boiler #7		61.0	5.33	429.8	9.10	-19.20	EXP				

Table E-9. Summary of Background PM Sources Included in the Air Modeling Analysis

Facility ID Number	Facility	Units	ID Name	Stack Parameters Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s)	PSD Source? (EXP/CON)	Modeled in AAQS	Class II	Class I
			PCPRB567	38.1	2.56	394.3	9.10	-28.64		No	No	Yes
7300003	City of Tallahassee S.O.Purdom Plant											
		Unit No. 2	TALPURD2	26.0	1.95	478.0	5.89	-1.81	EXP	No	No	Yes
		Unit No. 3	TALPURD3	26.0	1.95	478.0	5.89	-1.81	EXP	No	No	Yes
		Unit No. 4	TALPURD4	26.0	1.95	478.0	5.89	-1.81	EXP	No	No	Yes
		Unit No. 5	TALPURD5	38.1	3.96	447.0	7.23	-4.73	EXP	No	No	Yes
		Unit No. 6	TALPURD6	38.1	3.96	447.0	7.23	-4.73	EXP	No	No	Yes
		Unit No. 8	TALPURD8	61.0	5.00	353.0	15.38	2.14	CON	No	Yes	Yes
		Cooling Tower	TALPCOOL	13.4	10.08	305.0	7.09	0.30	CON	No	No	Yes
		Gas Turbines	TALPURGT	11.6	3.05	744.0	25.56	0.01	CON	No	No	Yes
1290001	City of Tallahassee A.B.Hopkins Plant											
		Unit No. 1	TALHOPK1	61.0	3.35	400.0	11.89	9.93		Yes	No	No
		Unit No. 2	TALHOPK2	76.2	4.27	400.0	21.00	29.30	CON	Yes	Yes	Yes
		Combustion Turbine No. 1	TALHPCT1	8.8	2.80	701.5	34.75	0.35		Yes	No	No
		Combustion Turbine No. 2	TALHPCT2	9.1	4.48	741.5	20.73	0.57		Yes	No	No
na	Englehard Corporation											
		Flash Dryer #3	ENGLE1	37	0.91	421.9	11.28	0.24	CON	Yes	Yes	Yes
		Flash Dryers #4 & #5	ENGLE2	40	0.76	402.4	15.24	0.49	CON	Yes	Yes	Yes
		A1; F1; F2	ENGLE3	32	0.30	293.0	13.11	0.16	CON	Yes	Yes	Yes
		A2; A3; D4; F12 to E25	ENGLE4	26	0.30	293.0	13.11	0.10	CON	Yes	Yes	Yes
		B1; B2; B3; E1; F3	ENGLE5	17	0.30	293.0	13.11	0.15	CON	Yes	Yes	Yes
		C77-78;C83-84;C114;C116	ENGLE6	22	0.24	293.0	6.52	0.15	CON	Yes	Yes	Yes
		C79 and C117	ENGLE7	35	0.52	293.0	3.57	0.05	CON	Yes	Yes	Yes
		C81; C82; C121; C125	ENGLE8	33	0.30	388.6	18.90	0.54	CON	Yes	Yes	Yes
		Calciners 3 and 4	ENGLE9	20	0.76	388.6	11.89	0.08	CON	Yes	Yes	Yes
		C126	ENGLE10	11	0.40	316.3	6.40	0.11	CON	Yes	Yes	Yes

[a] Volume Source

Table E-10. Summary of Maximum Pollutant Concentrations Predicted by the G-P Hosford Mill at the Bradwell Bay NWA, Compared to EPA Class I Significant Impact Levels

Pollutant	Averaging Time	Concentration [a] ($\mu g/m^3$)	Receptor UTM Location (m) East	Receptor UTM Location (m) North	Time Period (YYMMDDHE)	PSD Class I SIL ($\mu g/m^3$)
PM_{10}	Annual	0.032	730636.2	3343655.0	86123124	0.2
		0.020	729089.3	3340850.0	87123124	
		0.024	729833.8	3343638.0	88123124	
		0.043	729050.7	3342697.5	89123124	
		0.034	732241.1	3343689.0	90123124	
	24-Hour	0.599	729050.7	3342697.5	86100624	0.3
		0.635	732221.5	3344612.8	87073024	
		0.990	730636.2	3343655.0	88121724	
		0.688	733826.3	3344646.8	89040624	
		0.612	737015.9	3345639.5	90010924	
NO_2	Annual	0.032	730636.2	3343655.0	86123124	0.1
		0.019	729089.3	3340850.0	87123124	
		0.023	729050.7	3342697.5	88123124	
		0.043	729050.7	3342697.5	89123124	
		0.033	732221.5	3344612.8	90123124	

Notes: UTM = Universal Transverse Mercator.
NWA = National Wildlife Area
PSD = Prevention of Significant Deterioration
SIL = Significant Impact Level
YYMMDDHE = Year, Month, Day, Hour Ending

[a] Based on maximum predicted concentration using ISCST model and a 5-year meteorological data record.
UTM Coordinates are in Zone 16

Table E-11. Summary of Maximum Pollutant Concentrations Predicted by the G-P Hosford Mill at the St. Marks NWA, Compared to EPA Class I Significant Impact Levels

Pollutant	Averaging Time	Concentration [a] ($\mu g/m^3$)	Receptor UTM Location (m) East	Receptor UTM Location (m) North	Time Period (YYMMDDHE)	PSD Class I SIL ($\mu g/m^3$)
PM_{10}	Annual	0.009	744750	3322703	90123124	0.2
		0.013	744750	3322703	92123124	
		0.008	744750	3322703	96123124	
	24-Hour	0.146	744750	3322703	90111224	0.3
		0.182	746379	3321814	92112724	
		0.125	746379	3321814	96102924	
NO_2	Annual	0.0054	744750	3322703	90123124	0.1
		0.0079	743967	3321761	92123124	
		0.0054	744750	3322703	96123124	

Notes: UTM = Universal Transverse Mercator.
NWA = National Wildlife Area
PSD = Prevention of Significant Deterioration
SIL = Significant Impact Level
YYMMDDHE = Year, Month, Day, Hour Ending

[a] Based on the CALPUFF model using 1990, 1992, and 1996 surface and upper air meteorological data developed with the CALMET program. UTM coordinates are in Zone 16.

Table E-12. Maximum Predicted PM_{10} Impacts For Comparison to the PSD Class I Increments, at the St. Marks and Bradwell Bay NWA

Rank and Averaging Time	Concentration [a] (μg/m³)	Receptor UTM Location (km) East	North	Time Period (YYMMDDHE)	PSD Class I Increment (μg/m³)
St. Marks NWA[b]					
Annual	<0	na	na	90123124	1
	<0	na	na	92123124	
	<0	na	na	96123124	
HSH 24-Hour	0.369	743.967	3,321.761	90112424	5
	0.318	746.379	3,321.814	92120824	
	0.288	770.141	3,337.162	96120824	
Bradwell Bay NWA					
Annual	<0	na	na	90123124	1
	<0	na	na	92123124	
	<0	na	na	96123124	
HSH 24-Hour	0.531	740.347	3,340.167	90101024	5
	0.512	729.051	3,342.698	92112824	
	0.416	738.661	3,343.827	96020524	

Note: UTM = Universal Transverse Mercator.
HSH = Highest, Second-Highest
YYMMDDHE = Year, Month, Day, Hour Ending
na = not applicable

[a] Based on the CALPUFF model using 1990, 1992, and 1996 surface and upper air meteorological data developed with the CALMET program. UTM coordinates are in Zone 16.

[b] The G-P Hosford Mill is not significant at St. Marks NWA.

Table E-13. Summary of Maximum AQRV Concentrations Predicted for the G-P Hosford OSB Facility Only at the St. Marks and Bradwell Bay PSD Class I Areas

Pollutant	Averaging Time	Maximum Concentration at Area[a] ($\mu g/m^3$)	
		Bradwell Bay NWA	St. Marks NWA
NO_2	Annual	0.043	0.008
	24-Hour	0.840	0.218
	8-Hour	1.801	0.424
	3-Hour	3.488	0.528
	1-Hour	5.453	0.661
SO_2	Annual	0.003	0.001
	24-Hour	0.052	0.017
	8-Hour	0.111	0.032
	3-Hour	0.216	0.042
	1-Hour	0.365	0.052
PM_{10}	Annual	0.043	0.013
	24-Hour	0.990	0.182
	8-Hour	2.168	0.336
	3-Hour	3.810	0.538
	1-Hour	11.429	0.623
CO	Annual	0.027	0.011
	24-Hour	0.528	0.180
	8-Hour	1.132	0.324
	3-Hour	2.198	0.387
	1-Hour	3.439	0.483

[a] Highest predicted concentrations at Bradwell Bay NWA are based on ISCST model and 5-year meteorological data record. Highest predicted concentrations at St. Marks NWA are based on CALPUFF model and NW Florida CALMET domain for 1990. 1992 and 1996

Table E-14. Maximum 24-hour Visibility Impairment Predicted for the G-P Hosford OSB Mill, at the PSD Class I Area of the Saint Marks NWA

Ranking	Visibility Impairment (%) [a]			Visibility Impairment Criteria (%)
	1990	1992	1996	
Highest	4.17	3.30	4.28	5.0

[a] Concentrations are highest predicted using the CALPUFF model and Northwest Florida CALMET Domain, 1990, 1992, and 1996.

Table E-15. Maximum Total Nitrogen Annual Deposition Predicted for the G-P Hosford OSB Mill.
At the PSD Class I Areas of the Bradwell Bay and Saint Marks NWA

Class I Area	Total Deposition (Wet & Dry)						Deposition Analysis Threshold [b]
	1990		1992		1996		
	($g/m^2/s$)	(kg/ha/yr)[a]	($g/m^2/s$)	(kg/ha/yr)[a]	($g/m^2/s$)	(kg/ha/yr)[a]	(kg/ha/yr)
Bradwell Bay NWA	2.09E-11	0.0066	2.81E-11	0.0089	2.20E-11	0.0069	0.01
Saint Marks NWA	7.82E-12	0.0025	1.06E-11	0.0034	9.41E-12	0.0030	0.01

[a] Conversion factor is used to convert $g/m^2/s$ to kg/hectare (ha)/yr with the following units:

$g/m^2/s$ x 0.001 kg/g
x 10,000 m^2/hectare
x 3,600 sec/hr
x 8,760 hr/yr = kg/ha/yr
or
$g/m^2/s$ x 3.154E+08 = kg/ha/yr

[b] Deposition analysis thresholds (DAT) for nitrogen and sulfur deposition provided by the U.S. Fish and Wildlife Service, January 2002. A DAT is the additional amount of N or S deposition within a Class I area, below which estimated impacts from a proposed new or modified source are considered insignificant.

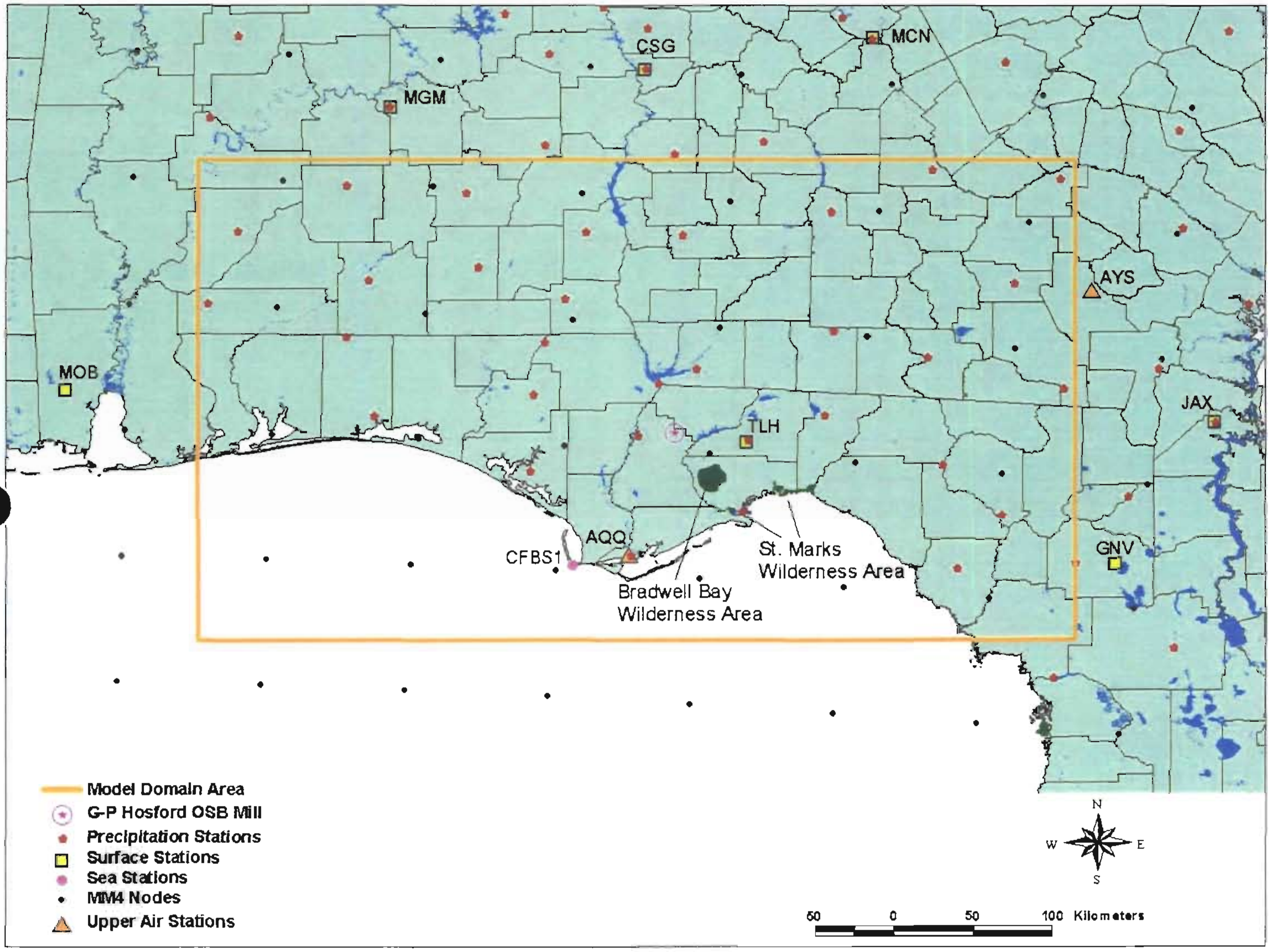

Figure 1. Model Domain with Meteorological Stations, G-P Hosford

ATTACHMENT F
Air Quality Analysis

ATTACHMENT F
AIR QUALITY ANALYSIS
HOSFORD, FL OPERATIONS

F.1 INTRODUCTION

United States Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP) rules require major new facilities and major modifications to undergo several analyses for emission increases subject to Prevention of Significant Deterioration (PSD) review. These analyses determine whether significant air quality deterioration will result from the new or modified facility. As described in Attachments B and C, the modifications at the G-P Hosford Mill will result in emissions increases above the significant emission rate for

- particulate matter less than 10 microns in diameter (PM_{10}),
- nitrogen oxides (NO_x),
- carbon monoxide (CO).

Therefore, the project is subject to PSD review for these pollutants. In addition to an analysis of control technology discussed in other attachments, PSD review requires G-P to conduct the following analyses:

- Source impact analysis,
- Good engineering practice stack height (GEP),
- Air quality analysis (monitoring),
- Additional impact analyses.

EPA regulations (40 CFR 52.21(k)) require that an applicant perform a source impact analysis for each applicable pollutant. The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with National Ambient Air Quality Standards (NAAQS) and allowable PSD increments. Section F.2 of this attachment presents the Source Impact Analysis.

In addition to the source impact analysis, PSD review requires that any emission limit must be applied in a source impact analysis with a stack height that does not exceed GEP (refer to 40 CFR 52.21(h)). To demonstrate this, G-P performed an analysis of the physical arrangement of stacks and solid physical structures that may affect dispersion and computed GEP stack heights. Section F.3 of this attachment presents the GEP Analysis.

The third analysis is specified by EPA regulation 40 CFR 52.21(m). In addition to predicting a source impact, a PSD permit application must contain an analysis of continuous ambient air quality data in the area affected by the project. The regulation presents the conditions that require pre-construction and post-construction monitoring of ambient air. Section F.4 of this attachment presents the Ambient Air Quality Analysis.

Lastly, EPA regulations (40 CFR 52.21(o)) require an analysis of the impairment to visibility and the impacts on soils and vegetation that would occur as a result of the project. These analyses are to be conducted primarily for PSD Class I areas. Impacts from general commercial, residential, industrial, and other growth associated with the facility or modification also must be addressed. Attachment E of this application presents the Additional Impact Analysis.

F.2. SOURCE IMPACT ANALYSIS

G-P conducted the Source Impact Analysis in two phases: 1) impact of the project, and 2) full impact analysis. The first phase determines the impact from the change in emissions associated with the project alone. G-P compares these impacts to EPA thresholds for significance and ambient monitoring criteria. If the project impacts exceed the Significant Impact Levels (SILs), then G-P conducts a full impact analysis. A full impact analysis predicts impacts from the sources across the proposed mill. G-P compares these impacts to state and national ambient air quality standards. The following sections discuss the methodology, data inputs, and techniques for both phases of the Source Impact Analysis.

F.2.1 AIR MODELING METHODOLOGY

The general modeling approach follows EPA and MDEQ modeling guidelines for determining compliance with the NAAQS and PSD Increments. In general, current policies stipulate that the highest annual average and highest, second-highest short-term (*i.e.*, 24 hours or less) concentrations be compared to the applicable standard when 5 years of meteorological data are used. The highest, second-highest concentration (HSH) is calculated for a receptor field by:

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

This approach is consistent with the air quality standards, which permit a short-term average concentration to be exceeded once per year at each receptor.

To develop the maximum short-term impacts for the G-P Hosford Mill, the general modeling approach was to first perform a screening analysis with a coarse receptor grid spacing to determine the critical impact locations. First, G-P predicted impacts for the screening analysis using a 5-year meteorological data record. G-P developed a final list of HSH short-term concentrations from the screening analysis. Then, a refined analysis was performed if the receptor spacing at the location of maximum impact is greater than 100 meters (m). The refined analyses used a denser receptor grid centered on the receptor at which the HSH concentration produced from the screening phase. G-P then executed the air dispersion model for the entire year(s) during which both the highest and second-highest concentrations were predicted to occur at that receptor, based on the screening analysis results.

F.2.2 MODEL SELECTION

G-P selected an air dispersion model based on the model's ability to simulate air quality impacts in areas surrounding the proposed Hosford plant. The area surrounding the Mill is mostly rural and flat to gently rolling. Within 1 kilometer of the plant, the area changes to a hilly area with several areas of elevated terrain. Figure F-1 presents a topographic map of the G-P Hosford Mill vicinity. Based on these features, G-P has selected the Industrial Source Complex Short-Term (ISCST3) model (Version 02035) to predict maximum concentrations in all areas in the vicinity of the plant site.

In this analysis, the US EPA regulatory default options are utilized in the ISCST3 model to predict all maximum impacts. These options include:

- Final plume rise at all receptor locations
- Stack-tip downwash
- Buoyancy-induced dispersion
- Default wind speed profile coefficients
- Default vertical potential temperature gradients
- Calm wind processing

F.2.3 LAND USE CLASSIFICATION

Dispersion coefficients are set in the model by selecting the land-use mode as urban or rural. The land use in the vicinity of the source is the criteria used to determine the setting. Auer developed a land-use procedure in 1978 to determine the model setting. The procedure involves classifying land areas within a 3-kilometer (km) radius circle centered on the Mill. Table F-1 presents the Auer classifications. G-P selected the land-use mode to reflect the majority of the classified area. The urban mode is selected if more than 50 percent of the land-use consists of one or more of the following land-use classifications:

- heavy industrial
- light-moderate industrial
- commercial, or
- compact residential

Table F-1 Auer Land Use Classifications			
Auer Class	**Use and Structures**	**Vegetation**	**Urban or Rural**
I1	Heavy industrial Major chemical, steel and fabrication industries; generally 3-5 story buildings, flat roofs	Grass and tree growth extremely rare <5% vegetation	Urban
I2	Light-moderate industrial Rail years, truck depots, warehouses, industrial parks, minor fabrications; generally 1-3 story buildings, flat roofs	Very limited grass, trees almost totally absent; <5% vegetation	Urban
C1	Commercial Office and apartment buildings, hotels; >10 story heights, flat roofs	Limited grass and trees; <15% vegetation	Urban
R1	Common residential Single family dwelling with normal easements; generally one story, pitched roof structures; frequently driveways	Abundant grass lawns and light-moderately wooded; >70% vegetation	Rural
R2	Compact residential Single, some multiple family dwelling with close spacing; generally <2 story, pitched roof structures; garages (via alley), no driveways	Limited lawn sizes, old established shade trees; <35% vegetation	Urban
R3	Compact residential Old multi-family dwellings with close (<2m) lateral flat roof structures; garages (via alley) and ashpits, no driveways	Limited lawn sizes, old established shade trees; <35% vegetation	Urban
R4	Estate residential Expansive family dwelling on multi-acre tracts	Abundant grass lawns and lightly wooded; >80% vegetation	Rural
A1	Metropolitan natural Major municipal, state, or federal parks, golf courses, cemeteries, campuses, occasional single story structures	Nearly total grass and lightly wooded; >95% vegetation	Rural
A2	Agricultural rural	Local crops (e.g., corn, soybean); 95% vegetation	Rural
A3	Undeveloped Uncultivated; wasteland	Mostly wild grasses and weeds, lightly wooded; 90% vegetation	Rural
A4	Undeveloped rural	Heavily wooded; >95% vegetation	Rural
A5	Water surfaces	Rivers, lakes	Rural

The urban classifications constitute less than 50% of the total area. Therefore, G-P set the ISCST3 model in the rural mode is used for the ISCST3 modeling.

F.2.4 METEOROLOGICAL DATA

Meteorological data used in the modeling analysis to predict air quality impacts consists of a preprocessed, five-year record of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS). The hourly surface observations were collected at the Tallahassee Airport. The upper air data was collected at Apalachicola, Florida. The period of record covers the years 1986 through 1990. FDEP prepared the preprocessed meteorological data and provided it to G-P. G-P did not perform any additional processing of the data. The NWS office at Tallahassee is located approximately 30 miles northeast of the proposed Hosford Plant and is the closest primary weather station to the study area that is representative. G-P used an anemometer height of 25 feet for the air dispersion modeling analyses.

F.2.5 BACKGROUND CONCENTRATIONS

Background concentrations are necessary to determine total ambient air quality impacts to demonstrate compliance with the NAAQS. "Background concentrations" are defined as concentrations due to sources other than those specifically included in the modeling analysis. For example, background concentration would account for other small point sources not included in the modeling, fugitive emission sources, and natural background sources (*e.g.*, mobile sources).

To select a background concentration, G-P has analyzed FLDEP and EPA ambient air quality observations. G-P collected information on monitor locations, their proximity to the Hosford Mill, data quality, and how recent the data was collected. Using these criteria, G-P selected the following values for background concentrations in micrograms per cubic meter ($\mu g/m^3$):

Table F-2. Summary of Selected Background Concentrations for Hosford Mill Modeling Analyses

Pollutant	Monitor Description	Averaging Period	Background Concentration ($\mu g/m^3$)
NO_2	ID: 12-033-0004 Escambia County Rural – Industrial: 2001 Annual Mean	Annual	16.17
PM_{10}	ID: 12-005-1004 Bay County Suburban – Commercial: 2002 High Second High and 2001 Annual mean	24-hr	49
		Annual	22

These values reflect the most current year of data by a representative monitor. Section F.3 presents additional information describing the criteria and basis for the selection of these values in addition to ambient monitoring requirements. Locations of these monitors are presented in Figure F-2.

F.2.6 BUILDING DOWNWASH

In accordance with current EPA policy, G-P evaluated the effect of building downwash on predicted air quality concentration levels in the modeling analysis. For this analysis, G-P used the US EPA-developed Building Profile Input Program (BPIP, Version 95086) to determine the appropriate direction-specific building dimensions for all modeled sources at the Mill. The building height, length, and width for all significant building structures are input to the program. For short stacks (*i.e.*, physical stack height is less than $H_b + 0.5\ L_b$, where H_b is the building height and L_b is the lesser of the building height or projected width), BPIP applies the Schulman and Scire (1980) algorithm. For cases where the physical stack is greater than $H_b + 0.5\ L_b$, but less than GEP, BPIP applies the Huber-Snyder (1976) algorithm. For both downwash methods, the ISCST3 model uses direction-specific building dimensions for H_b and L_b for 36 radial directions, with each direction representing a 10-degree sector. Table F-3 presents a summary of the horizontal and vertical structure dimensions at the Mill that are considered in the BPIP analysis. Inspection of the ISCST3 model output indicates that the ISCST3 model is predicting that no cavity effects are occurring at the receptors. Figure F-3 presents plot plan drawings of the buildings and tanks.

Table F-3. Building Dimensions for Proposed G-P Plant, Hosford			
		Dimensions (ft) [a]	
BPIP ID	Building Description	Footprint	Ht
PROCESSA	Process Building, (Section A)	393	22.86
PROCESSB	Process Building, (Section B)	520	24.38
LOWERBAY	Process Building, Lower Bay	290	15.75
HGHBAY	Process Building, High Bay	223	26.67
THERMALO	Thermal Oil Building	118	18.3
ADRYERRT	Dryer RTO A	147	9.75
BDRYERRT	Dryer RTO B	147	9.75
PRESSRTO	Press RTO	82	9.75
MECH	Mechanical Building	184	11.7
DRYCTRL	Dryer Control Building	65	10.67
BLD1	ESP Building 1	39	15.5
ADMIN	Administration	281	10.67
FINISHWH	Finish Warehouse	574	11.7

Notes
(a) Footprint represents maximum projected width.

F.2.7 SIGNIFICANT IMPACT ANALYSIS

Purpose and Methodology

The significant impact analysis is the first phase of the Source Impact Analysis and determines two results: 1) the maximum impacts from the project emissions and 2) the location of predicted impacts greater than significant impact levels (SILs). The area of these impacts defines the impact area of the project and the significant impact distance (SID).

G-P performed a significant impact analysis to determine whether the emissions increases result in maximum predicted impacts greater than the PSD modeling SILs or the EPA monitoring deminimis concentrations. FDEP policies stipulate that G-P compare the highest predicted short-term and highest annual mean impacts to these levels. Table F-4 presents the SILs and deminimis concentrations.

Table F-4. Significant Impact Levels and De Minimis Concentrations for Modeled Pollutants, G-P Hosford			
Pollutant	Averaging Time	Significant Impact Levels ($\mu g/m^3$)	De Minimis Concentration ($\mu g/m^3$)
PM_{10}	24-hour	5	10
	Annual	1	--
NO_2	Annual	1	14
CO	1-hour	2,000	--
	8-hour	500	575

Model Inventory

For the significant impact analysis, the model inventory only includes point and fugitive sources that will experience an increase or decrease in emissions due to the project. The emission increase represents the difference between the potential emissions and the actual emissions during the baseline period. The baseline must reflect conditions prior to any modifications or physical changes. However, since this facility has never operated, G-P assigned a value of zero for baseline emissions for all sources.

Table F-5 presents the potential emission rates for all sources of particulate matter PM_{10} at the Hosford Mill. Because the PM_{10} SILs and monitoring deminimis levels are only for the 24-hour averaging period, G-P applied maximum hourly emission rates. Figure F-4 presents a plot plan for current emission source arrangements.

G-P modeled point sources using the POINT source type. G-P modeled fugitive sources using the VOLUME source type. The VOLUME source type applies two dimensions (*i.e.* horizontal and vertical) and a square base to represent the emission source. In cases where the model cannot approximate a fugitive emission source as a single square base model source, G-P divided the emission source into multiple identical sources. G-P divided the emission rate equally among the model sources.

G-P also calculated PM_{10} emissions from Mill roads. The model inventory distributes emissions from individual routes into many model sources, each representing a square-based segment of a route. Therefore, the emission rate is constant among each model source along a route. The Mill roads are all paved, therefore no unpaved areas are presented. After analyzing the available data, G-P computed emissions for the significant impact analysis by applying the assumptions of: road traffic for paved roads is linear to production rates or raw material feed rates. Table F-5 summarizes the PM_{10} emissions from roads and Table F-6 presents the potential emission rates from all sources.

Table F-5. Fugitive PM_{10} Emissions due to Roads, G-P Hosford Mill.

		PM_{10} Emission Rates						
		Total Road (tpy)			Model Input		Source Model Rates	
Emission Pt ID	Source Description	Service	Production	Total	No. of Sources	Model Name	(tpy)	(lb/hr)
EU11	All Traffic 200m Entrance	0.214	0.8	1	4	ROADA1-ROADA4	0.25	0.057
EU11	Product Shipping 114 m	0.122	NA	0.122	3	ROADB1-ROADB3	0.04	0.009
EU11	Service 700m	0.0014	NA	0.0014	15	ROADC1-ROADC15	0.0001	0.00002
EU11	Logs/Bark/Fines 800m	NA	3.2	3.2	20	ROADD1-ROADD20	0.16	0.037

Table F-6 Potential PM Emissions from Point and Fugitive Sources

Emission Unit	Model ID	Source Description	Potential PM (lbs/hr)	Potential PM (tons/yr)
001	EP-1A	Dryer RTO Stack A	21.3	93.294
001	EP-1B	Dryer RTO Stack B	21.3	93.294
002	EP-2	Press Vent RTO Stack	3.61	15.8118
003	EP-3	Screen Fines/Saw Trim Baghouse	2.6	11.388
004	EP-4	Saw Trim/Finishing Line Baghouse	1.34	5.8692
005	EP-5	Mat Reject/Flying Saw Baghouse	2.3	10.074
006	EP-6	Specialty Saw/Sander Baghouse	2.2	9.636
007	EP-7	Fuel System Baghouse	0.4	1.752
008	EP-8	Forming Bins Baghouse	1.96	8.5848
009	EP-9	Hammermill/Dry Fuel Sys Baghouse	2.65	11.607
010	EP-10	Thermal Oil Heating Sys ESP	8	35.04
011	PDBARK1	Debarker 1	0.3133	1.372254
011	PDBARK2	Debarker 2	0.3133	1.372254
011	PDBARK3	Debarker 3	0.3133	1.372254
011	BARKHOG	Bark hog	0.018	0.07884
011	BARKPILE	Bark Pile	0.020	0.0876
011	TP1	Transfer Point	0.0000331	0.000145
011	TP2	Transfer Point	0.0000331	0.000145
011	TP3	Transfer Point	0.0000331	0.000145
011	TP4	Transfer Point	0.0000331	0.000145
011	TP5	Transfer Point	0.0000331	0.000145
011	TP6	Transfer Point	0.0000331	0.000145
011	TP7	Transfer Point	0.0000331	0.000145
011	ROADA1	Entry Road	0.057	0.25
011	ROADA2	Entry Road	0.057	0.25
011	ROADA3	Entry Road	0.057	0.25
011	ROADA4	Entry Road	0.057	0.25
011	ROADB1	Shipping Road	0.009	0.04
011	ROADB2	Shipping Road	0.009	0.04
011	ROADB3	Shipping Road	0.009	0.04
011	ROADC1	Service Road	0.00002	0.0001
011	ROADC2	Service Road	0.00002	0.0001
011	ROADC3	Service Road	0.00002	0.0001
011	ROADC4	Service Road	0.00002	0.0001
011	ROADC5	Service Road	0.00002	0.0001
011	ROADC6	Service Road	0.00002	0.0001
011	ROADC7	Service Road	0.00002	0.0001
011	ROADC8	Service Road	0.00002	0.0001
011	ROADC9	Service Road	0.00002	0.0001
011	ROADC10	Service Road	0.00002	0.0001

Point Source Modeling Parameters

G-P developed modeling parameters for each point source using physical data for stack height, stack diameter, exit temperature and exit velocity. For point source which operate at ambient temperature, G-P set the model value to 0 degrees Kelvin (K). With this value, the ISCST3 model will set the source exit temperature equal to the ambient temperature listed in the meteorological data file for each hour. Thus, the model will calculate zero buoyant plume rise for these sources. For point sources which operate with a raincap or are not oriented vertically up, G-P set the exit velocity to 0.001 meters per second (m/s). Table F-8 presents these modeling parameters.

Fugitive Source Modeling Parameters

G-P also calculated modeling parameters for fugitive sources. Modeled as volumes, the parameters are: release height and initial lateral and vertical dimensions. G-P calculated values for the parameters in accordance with the ISCST3 manual and general EPA guidance. For release height, G-P selected the height above ground to the center of the physical source. For example, for a belt-to-belt transfer point, the release height is the height above ground to the transfer point. If the source is located within a building, then the release height is equal to ½ of the building height. G-P calculated initial dimensions using the formulas presented in Table F-9. Table F-10 presents these calculations and the modeling parameters for the fugitive sources.

Table F-8. Stack Parameters for Emission Sources at G-P Plant, Hosford

		Stack Parameters									
		Source Location (m) [a]		Stack Height		Stack Exit Temp		Stack Exit Velocity		Stack Diameter	
Model ID	Description	X	Y	(ft)	(m)	K	F	(fpm)	(m/s)	(in)	(m)
EP-1A	Dryer RTO Stack A	-98.3	-84.3	180	54.88	399.3	259.0	3013	15.31	102	2.59
EP-1B	Dryer RTO Stack B	0	0	180	54.88	399.3	259.0	3013	15.31	102	2.59
EP-2	Press Vent RTO Stack	-167	0.4	100	30.49	340.9	154.0	3633	18.46	80	2.03
EP-3	Screen Fines/Saw Trim Baghouse CP-003	-36.1	8.8	132	40.24	294.3	70.0	4089	20.78	25	0.64
EP-4	Saw Trim/Finishing Line Baghouse CP-001	-272.7	-109.1	100	30.49	294.3	70.0	3982	20.23	38	0.97
EP-5	Mat Reject/Flying Saw Baghouse CP-005	-90.8	-39.7	132	40.24	294.3	70.0	4243	21.56	48	1.22
EP-6	Specialty Saw/Sander Baghouse 1 CP-006-1	-269.7	-106.5	90	27.44	294.3	70.0	4102	20.84	34	0.86
EP-7	Fuel Handling System Baghouse CP-006-2	-43.9	5.7	75	22.87	294.3	70.0	--	0.01[b]	10	0.25
EP-8	Forming Bins Baghouse CP-002	-93.9	-55.3	105	32.01	294.3	70.0	4673	23.74	30	0.76
EP-9	Hammermill/Dry Fuel System Baghouse	-34	10.3	132	40.24	294.3	70.0	4068	20.67	26	0.66
EP-10	Thermal Oil Heating System ESP	-129.5	16.5	138	42.07	644.3	700.0	1254	6.37	66	1.68
PDBARK1	Debarker #1 [c]	34.3	36.9	28	8.53	0	0	--	0.001[b]	--	0.001
PDBARK2	Debarker #2 [c]	40.3	43.3	28	8.53	0	0	--	0.001[b]	--	0.001
PDBARK3	Debarker #3 [c]	46.4	48.9	28	8.53	0	0	--	0.001[b]	--	0.001

Notes:

[a] Source Locations are with respect to the Dryer RTO Stack B in a true north coordinate system.

[b] Source has a raincap, exit velocity set equal to 0.01 m/s

[c] Source is a "virtual" point source. Temperature is set to 0 K so that the model will not perform thermal plume calculation. Velocity is set to 0.001 m/s so that the model will calculate momentum buoyancy to the plume. Stack diameter is set to 0.001 m.

Table F-9. Procedure for Calculating Fugitive Source Modeling Parameters. G-P Hosford		
Type of Source	Procedure for Obtaining Initial Dimension	
	Initial Vertical Dimensions (σ_{zo})	Initial Lateral Dimensions (σ_{yo})
Surface-Based Source	Vertical dimension of source divided by 2.15	length of side divided by 4.3
Elevated Source (he > 0) on or Adjacent to a Building	Building height divided by 2.15	
Elevated Source (he > 0) not on or Adjacent to a Building	Vertical dimension of source divided by 4.3	

Notes
He = effective height of emissions

Table F-10. Volume Source Parameters for Emission Sources at Proposed G-P Plant, Hosford

Model ID	Description	Source Location (m) [a]		Source Dimensions		Elevated or Surfaced Based	Release Height (m)	Initial Lateral Dimension (m)	Initial Vertical Dimension (m)
		X	y	Footprint (m)	Height (m)				
BARKPILE	Bark Pile	30.5	121.9	15.2 m rad	4.57	Elevated	2.28	7.0884	1.0633
BARKHOG	Bark Hog	24.4	100.6	0.61 m rad	4.42	Surface	3.91	0.2835	0.47
TP1	Transfer Point 1	25.6	46	0.91 X 0.91	1.07	Elevated	4.87	0.2127	0.2127
TP2	Transfer Point 2	30.5	51.8	0.91 X 0.91	1.07	Elevated	4.87	0.2127	0.2127
TP3	Transfer Point 3	37	57	0.91 X 0.91	1.07	Elevated	4.87	0.2127	0.2127
TP4	Transfer Point 4	54.9	73.2	0.91 X 0.91	3.66	Elevated	7.62	0.2127	0.2127
TP5	Transfer Point 5	24.4	100.6	0.91 X 0.91	7.62	Elevated	7.62	0.2127	0.2127
TP6	Transfer Point 6	12.2	118.9	0.91 X 0.91	3.05	Elevated	7.62	0.2127	0.2127
TP7	Transfer Point 7	30.5	121.9	0.91 X 0.91	11.59	Elevated	7.62	0.2127	0.2127

For roadways, G-P computed the parameters using the following steps:

1. Determine the adjusted width of the road. The adjusted width is the actual width of the road plus 6 meters. The additional width represents turbulence caused by the vehicle as it moves along the road. This width will represent a side of the base of the volume.

2. Determine the number of volume sources, N. Divide the length of the road by the adjusted width. The result is the maximum number of volume sources that could be used to represent the road.

3. Determine the height of the volume. The height will be equal to twice the height of the vehicle generating the emissions.

4. Determine the initial horizontal sigma for each volume. Divide twice the adjusted width by 2.15. Start with the volume nearest to the property line.

5. Determine the initial vertical sigma. Divide the height of the volume determined in Step 3 by 2.15.

6. Determine the release point. Divide the height of the volume by two. This point is in the center of the volume.

7. Determine the emission rate for each volume used to calculate the initial horizontal sigma in Step 4. Divide the total emission rate equally among the individual volumes used to represent the road, unless there is a known spatial variation in emissions.

8. Determine the coordinate for the release point. The release point location is in the center of the base of the volume. This location will be at least source width from the nearest receptor.

Using the above steps, the analysis assigned the following parameters to all road emission sources in the model:

Release Height = 3.66 m

Initial vertical sigma (σ_{zo}) = 1.7 m

Initial horizontal sigma (σy_0) = 18.34 .m

Receptor Locations

All analyses will use screening and refined Cartesian receptor grids. All screening grids will include receptors spaced as follows:

- 100-m intervals along the fenceline
- 100-m intervals within 2 km of the Mill
- 500-m intervals beyond 2 km of the Mill to 5 km.
- 1 km intervals beyond 5 km of the Mill to the SID (The Significant Impact Analysis will determine the SID.)

Because G-P computes the SID for each pollutant separately, the extent of the receptor grids may vary among pollutants. Figure F-6 presents a plot plan of the facility and the modeled location of the fenceline. While the Mill property extends beyond the fence shown, G-P modeled all areas, including our property outside the fence as ambient air.

F.2.8 NAAQS MODELING ANALYSIS

Purpose and Methodology

As discussed in the result section (Section F.3), preliminary modeling of the proposed project indicated a significant impact (*i.e.*, maximum impact at or above the PSD significance levels) for NO_2 and PM_{10}. Therefore, PSD review requires G-P to perform a full air quality analysis to demonstrate compliance with the NAAQS and state AAQS. The NAAQS/AAQS impact analysis predicts the maximum ambient air concentration due to 1) all Mill sources emitting at maximum potential emission rates, 2) off-site sources at maximum permitted rates, and 3) natural and background sources. The total of these concentrations must be less than the NAAQS/AAQS. Table F-11 summarizes the NAAQS and state AAQS.

Table F-11. State and National Ambient Air Quality Standards for Modeled Pollutants, G-P Hosford

Pollutant	Averaging Time	NAAQS/AAQS ($\mu g/m^3$)	Form of Standard
PM_{10}	24-hour	150	High-sixth-highest for 5 years
	Annual	50	Annual Mean
NO_2	Annual	100	Annual Mean

Inventory - GP

For the NAAQS/AAQS impact analysis, the model inventory includes all emission sources from the entire Mill at their potential emission rates. The inventory does not include any offset or negative emission sources. Tables F-12 and F-13 summarize emission rates and modeling parameters. Figure F-7 presents the arrangement of these sources.

Table F-12. Summary of Maximum Potential Particulate Matter Emissions G-P Hosford

Emission Pt ID	Model ID	Source Description	Potential PM (lbs/hr)	Potential PM (tons/yr)
001	EP-1A	Dryer RTO Stack A	21.3	93.294
001	EP-1B	Dryer RTO Stack B	21.3	93.294
002	EP-2	Press Vent RTO Stack	3.61	15.8118
003	EP-3	Screen Fines/Saw Trim Baghouse	2.6	11.388
004	EP-4	Saw Trim/Finishing Line Baghouse	1.34	5.8692
005	EP-5	Mat Reject/Flying Saw Baghouse	2.3	10.074
006	EP-6	Specialty Saw/Sander Baghouse	2.2	9.636
007	EP-7	Fuel System Baghouse	0.4	1.752
008	EP-8	Forming Bins Baghouse	1.96	8.5848
009	EP-9	Hammermill/Dry Fuel Sys Baghouse	2.65	11.607
010	EP-10	Thermal Oil Heating Sys ESP	8	35.04
011	PDBARK1	Debarker 1	0.3133	1.372254
011	PDBARK2	Debarker 2	0.3133	1.372254
011	PDBARK3	Debarker 3	0.3133	1.372254
011	BARKHOG	Bark hog	0.018	0.07884
011	BARKPILE	Bark Pile	0.020	0.0876

Table F-12. Summary of Maximum Potential Particulate Matter Emissions G-P Hosford

Emission Pt ID	Model ID	Source Description	Potential PM (lbs/hr)	Potential PM (tons/yr)
011	TP1	Transfer Point	0.0000331	0.000145
011	TP2	Transfer Point	0.0000331	0.000145
011	TP3	Transfer Point	0.0000331	0.000145
011	TP4	Transfer Point	0.0000331	0.000145
011	TP5	Transfer Point	0.0000331	0.000145
011	TP6	Transfer Point	0.0000331	0.000145
011	TP7	Transfer Point	0.0000331	0.000145
011	ROADA1	Entry Road	0.057	0.25
011	ROADA2	Entry Road	0.057	0.25
011	ROADA3	Entry Road	0.057	0.25
011	ROADA4	Entry Road	0.057	0.25
011	ROADB1	Shipping Road	0.009	0.04
011	ROADB2	Shipping Road	0.009	0.04
011	ROADB3	Shipping Road	0.009	0.04
011	ROADC1	Service Road	0.00002	0.0001
011	ROADC2	Service Road	0.00002	0.0001
011	ROADC3	Service Road	0.00002	0.0001
011	ROADC4	Service Road	0.00002	0.0001
011	ROADC5	Service Road	0.00002	0.0001
011	ROADC6	Service Road	0.00002	0.0001
011	ROADC7	Service Road	0.00002	0.0001
011	ROADC8	Service Road	0.00002	0.0001
011	ROADC9	Service Road	0.00002	0.0001
011	ROADC10	Service Road	0.00002	0.0001
011	ROADC11	Service Road	0.00002	0.0001
011	ROADC12	Service Road	0.00002	0.0001
011	ROADC13	Service Road	0.00002	0.0001
011	ROADC14	Service Road	0.00002	0.0001
011	ROADC15	Service Road	0.00002	0.0001
011	ROADD1	Log Delivery Road	0.037	0.16
011	ROADD2	Log Delivery Road	0.037	0.16
011	ROADD3	Log Delivery Road	0.037	0.16
011	ROADD4	Log Delivery Road	0.037	0.16
011	ROADD5	Log Delivery Road	0.037	0.16
011	ROADD6	Log Delivery Road	0.037	0.16
011	ROADD7	Log Delivery Road	0.037	0.16
011	ROADD8	Log Delivery Road	0.037	0.16
011	ROADD9	Log Delivery Road	0.037	0.16
011	ROADD10	Log Delivery Road	0.037	0.16
011	ROADD11	Log Delivery Road	0.037	0.16

Table F-12. Summary of Maximum Potential Particulate Matter Emissions G-P Hosford

Emission Pt ID	Model ID	Source Description	Potential PM (lbs/hr)	Potential PM (tons/yr)
011	ROADD12	Log Delivery Road	0.037	0.16
011	ROADD13	Log Delivery Road	0.037	0.16
011	ROADD14	Log Delivery Road	0.037	0.16
011	ROADD15	Log Delivery Road	0.037	0.16
011	ROADD16	Log Delivery Road	0.037	0.16
011	ROADD17	Log Delivery Road	0.037	0.16
011	ROADD18	Log Delivery Road	0.037	0.16
011	ROADD19	Log Delivery Road	0.037	0.16
011	ROADD20	Log Delivery Road	0.037	0.16

Table F-13. Summary of Maximum Potential Emissions for NO_2, G-P Hosford

			Emission Rates	
			Potential	Potential
Emission Pt ID	Model ID	Source Description	(lb/hr)	(tons/yr)
EP_1A	EP-1A	Dryer RTO 1	37.9	166
EP_1B	EP-1B	Dryer RTO 2	37.9	166
EP_2	EP-2	Press RTO	13.5	59.13
EP_10	EP-10	Thermal Oil Heater	6	26.28
		Total All Sources:	95.3	417.41

Inventory – Competing Sources

A full analysis must include the emissions of competing sources. Table F-14 presents the competing sources considered within the screening area. The screening area is unique for each pollutant, and is the area within a circle centered on the project with a radius equal to the significant impact distance plus 50 km, but not to exceed 100 km. The screening areas for NO_2 and PM_{10}, are 54.6 and 56.1 km, respectively. In addition to the sources within the screening area, G-P also considered all sources with potential emissions greater than 100 tpy which are near the 100 km radius. The original emission inventory data are in electronic form and are included with the computer files in the Appendix for this attachment. In cases where FDEP/GEPD data did not include the competing source base elevation, G-P applied the elevation of the nearest receptor to the competing source.

G-P included all competing sources within the SID in the NAAQS modeling analysis. G-P evaluated facilities that are beyond the SID with the North Carolina Screening Technique. The technique compares the annual emissions (in tpy) to a specific threshold. If the emissions are less than the threshold, then G-

P expects that the emissions from the facility will not have significant interaction with the Hosford Mill. The threshold is equal to the quantity of 20 x (D-S) (Note D is the distance between the competing source and the Mill. S is the SID). G-P included a facility from the NAAQS modeling analysis if the facility-wide permitted emission rate was above the threshold. The Appendix for this attachment presents additional information on the North Carolina Screening Technique.

Table F-14 Summary of Emissions from Competing Sources Considered in the Modeling Analysis. G-P Hosford

FACILITY ID	OWNER/COMPANY	Distance to GP (km)	Potential (tpy)	
			PM	NO2
7774811	C. W. ROBERTS CONTRACTING, INC.	5.21	0.39	11.7
0390029	FLORIDA GAS TRANSMISSION COMPANY	9.96	11.27	1403.07
0770009	DG ENERGY SOLUTIONS, LLC	12.25	48.30	140
0390025	FLORIDA ROCK INDUSTRIES, INC.	21.57	0.05	
0390026	FLORIDA ROCK INDUSTRIES, INC.	21.57	28.40	
0390030	HARBORLITE CORPORATION	22.40	34.80	
0390041	FLORIDIN DIVISION OF ITC INDUSTRIALS INC	22.48	9.60	
0390033	BEVIS HOLDINGS	25.06	2.63	0.9855
0390005	ENGELHARD CORPORATION	26.01	284.70	18.47
0770007	NORTH FLORIDA LUMBER	26.49	83.28	29.2365
0630014	GULF POWER COMPANY	28.62	1414.00	1348.8
0130007	COUCH READY MIX USA	29.36	0.91	
0390004	FLORIDA DEPT. OF CHILDREN AND FAMILIES	30.30	94.85	132.495
0390034	MARTIN MARIETTA MATERIALS, INC.	30.49	2.76	
0130008	BIG RIVER CYPRESS & HARDWOOD, INC.	30.94	7.90	
0730003	CITY OF TALLAHASSEE	35.81	3758.40	8898.9
7775130	GIBBS EXCAVATING AND LAND CLEARING LLC	37.71	0.00	
0730040	MITCHELL BROTHERS, INC.	38.24	0.00	
0730104	JIMMIE CROWDER EXCAVATING	38.28	22.80	47.8
7770100	C.W. ROBERTS CONTRACTING, INC.	38.94	0.00	
0730068	FAIRCHILD CREMATION SERVICES, INC.	40.61	0.30	0.1934
0390009	COASTAL LUMBER CO	41.51	90.00	58.9
0730052	TERMINAL SERVICE COMPANY	41.57	0.00	
0730057	TALLA - COMM INDUSTRIES INC.	42.87	0.00	
0730010	FLORIDA STATE UNIVERSITY	43.22	7.50	95.23
0630028	SPANISH TRAIL LUMBER CO., LLC	43.89	233.32	71.27
0730065	STEINER CORP. DBA ALSCO, INC	45.23	1.89	5.4093
0730069	CEMEX INC	45.82	0.00	
0630046	BAXTER'S ASPHALT & CONCRETE, INC. DBA DO	46.22	0.30	
7770255	TALLAHASSEE REDI-MIX CO.	46.32	0.68	
0730009	FLORIDA A&M UNIVERSITY	46.72	13.57	28.47
0730062	DEPARTMENT OF MANAGEMENT SERVICES	47.12	0.18	2.92
0730060	MCNEILL COMPANY INC.	48.17	0.00	23.4
0730042	CULLEY & SONS FUNERAL HOME	51.50	0.38	
0630052	ANDERSON MATERIALS CO., INC.	52.21	49.00	
7775064	ANDERSON COLUMBIA CO., INC.	52.32	7.98	
0730034	MITCHELL BROTHERS, INC.	52.48	14.80	
7770024	COUCH READY MIX USA	56.98	1.05	
0630002	BAXTER ASPHALT & CONCRETE	60.11	42.96	
0630041	GOLDEN PEANUT COMPANY	61.09	1.80	

Table F-14 Summary of Emissions from Competing Sources Considered in the Modeling Analysis, G-P Hosford

FACILITY ID	OWNER/COMPANY	Distance to GP (km)	Potential (tpy)	
			PM	NO2
1290001	TALLAHASSEE CITY PURDOM GENERATING STA.	63.08	700.40	2500.3
0630039	CLOVER LEAF GIN, INCORPORATED	63.85	82.60	2.1
0630031	WHITE CONSTRUCTION COMPANY	68.58	30.62	8.31
0630040	GOLDEN PEANUT COMPANY	70.00	0.20	
0650004	FLORIDA ROCK INDUSTRIES, INC.	72.01	0.78	
0370008	FRANKLIN COUNTY BOARD OF COMMISSIONERS	72.61	76.87	
7770049	WHITE CONSTRUCTION COMPANY, INC.	73.52	4.24	29
0050031	BAY COUNTY BOARD OF COUNTY COMMISSIONERS	74.15	59.57	236.1
7775029	ANDERSON COLUMBIA CO., INC.	75.80	12.00	
0050038	TRIANGLE CONSTRUCTION ROAD BUILDING INC.	78.30	11.50	
1330006	JERKINS, INCORPORATED	79.49	0.65	
1330037	ANDERSON COLUMBIA CO., INC.	81.48	14.90	
0630045	WASTE MANAGEMENT INC. OF FLORIDA	82.92	0.37	6.49
0050008	G.A.C. CONTRACTORS INC.	83.01	44.29	13
0050029	GULF COAST CREMATORY SER	83.52	1.78	
7774815	WHITE CONSTRUCTION COMPANY, INC.	84.60	12.50	24.7
0050078	CITY OF LYNN HAVEN	85.50	1.50	2.5
0650001	JEFFERSON POWER LC	86.49	155.40	
0450007	CEMEX, INC.	86.56	0.13	
0450002	ARIZONA CHEMICAL COMPANY	87.10	91.48	93.29
1230030	WHITE CONSTRUCTION COMPANY	87.19	47.15	
0050001	ARIZONA CHEMICAL COMPANY	87.61	123.86	229.95
0050009	STONE CONTAINER CORPORATION	88.00	2070.65	2037.04
7775107	SOUTHEASTERN LANDSCAPE INC	88.07	2.40	15.4
0050005	ANDERSON COLUMBIA CO., INC.	88.11	28.80	22.98
0050052	TEXTURED COATINGS OF AMERICA,INC.	88.13	0.00	
0050034	WPC FLORIDA LLC	88.23	0.00	
0050043	EWELL INDUSTRIES, INC.	88.30	0.00	
0050051	HUMANE SOCIETY OF BAY COUNTY.	88.59	2.63	
0050053	WPC FLORIDA LLC	88.62	0.00	
0050066	COUCH READY MIX USA	89.19	0.03	
0050040	HONEYWELL FRICTION MATERIALS	89.33	54.60	
1230044	FLORIDA ROCK INDUSTRIES, INC.	89.54	0.00	
0050073	MACHRISTE CREMATORY	89.94	0.51	
0050045	GULF TERMINAL CORPORATION	90.07	1.16	15.5
7770062	C W ROBERTS CONTRACTING INC	90.55	6.50	13.8
0050014	GULF POWER COMPANY	91.08	4922.74	13536.512
0050081	WILSON FUNERAL HOME	91.47	2.00	3.3
7774810	AMERICAN SAND & X-CAVATION	91.98	2.00	3.63
0630011	REX LUMBER, LLC	93.15	41.28	4
0050024	UNITED STATES AIR FORCE	89.11		87.97

Table F-15 presents the screening of PM_{10} sources within 100 km of the Mill provided by FDEP and Georgia Environmental Protection Division (GEPD). Table F-16 presents the individual stack parameters for sources at these facilities. In cases of missing stack parameters in the data, the following assumptions were made:

For Point sources

- Stack Temperature set to ambient (0 K)
- Stack Diameter and Exit Velocity set to 0.001 m. and 0.001 m/s, respectively
- Stack Height of 10 feet

For Fugitive sources

- Release Height of 3 meters
- Vertical extent of 5 m. and an initial Vertical Dispersion Coefficient (σ_Z) of 2.33 m
- Lateral extent of 5 m. and an initial Lateral Dispersion Coefficient (σ_Y) of 1.16 m

To reduce the number of model sources for PM sources, G-P first combined sources with identical stack parameters. Second, G-P combined stacks at an individual facility using US EPA's method for merging sources (US EPA, 1992). For each stack, the parameter M was computed as:

$M = (h_s)(V)(T_s)/(Q)$

where: M = merged stack parameter which accounts for the relative influence of stack height, plume rise, and emission rate on concentrations

h_s = stack height (m)

V = $(\pi/4)\, d_s^2 v_s$ = stack gas volumetric flow rate (m^3/s)

d_s = inside stack diameter (m)

v_s = stack gas exit velocity (m/s)

T_s = stack gas exit temperature (K)

Q = pollutant emission rate (g/s)

The stack with the lowest value of M is used as the representative stack. Then, the sum of the emissions from all applicable sources is modeled with the representative stack. The Appendix presents the stack merging calculations and additional information on the merging technique.

Table F-15 Summary of North Carolina Screening of Florida Competing PM10 Sources Within 100 km of Hosford								
		Utm Coordinates						
Facility Id	Owner/Company	ZONE	NORTH (Km)	EAST (Km)	Distance To Gp Km	Potential (Tpy)	Threshold	Include In Model
7774811	C. W. ROBERTS CONTRACTING, INC.	16	3365.16	710.96	5.21	0.39	-18	YES
0390029	FLORIDA GAS TRANSMISSION COMPANY	16	3377.4	719.9	9.96	11.27	77	NO
0770009	DG ENERGY SOLUTIONS, LLC	16	3358.1	709.4	12.25	48.30	123	NO
0390025	FLORIDA ROCK INDUSTRIES, INC.	16	3385.4	728.4	21.57	0.05	309	NO
0390026	FLORIDA ROCK INDUSTRIES, INC.	16	3385.4	728.4	21.57	28.40	309	NO
0390030	HARBORLITE CORPORATION	16	3385.2	729.8	22.40	34.80	326	NO
0390041	FLORIDIN DIVISION OF ITC INDUSTRIALS INC	16	3384	731	22.48	9.60	328	NO
0390033	BEVIS HOLDINGS	16	3386.1	732.6	25.06	2.63	379	NO
0390005	ENGELHARD CORPORATION	16	3387.5	732.6	26.01	284.70	398	NO
0770007	NORTH FLORIDA LUMBER	16	3358.88	689.54	26.49	83.28	408	NO
0630014	GULF POWER COMPANY	16	3395.8	702.4	28.62	1414.00	450	YES
0130007	COUCH READY MIX USA	16	3370.28	684.43	29.36	0.91	465	NO
0390004	FLORIDA DEPT. OF CHILDREN AND FAMILIES	16	3399.2	707.6	30.30	94.85	484	NO
0390034	MARTIN MARIETTA MATERIALS, INC.	16	3398.09	703.08	30.49	2.76	488	NO
0130008	BIG RIVER CYPRESS & HARDWOOD, INC.	16	3372.32	682.97	30.94	7.90	497	NO
0730003	CITY OF TALLAHASSEE	16	3371.7	749.53	35.81	3758.40	594	YES
7775130	GIBBS EXCAVATING AND LAND CLEARING LLC	16	3379.85	750.06	37.71	0.00	632	NO
0730040	MITCHELL BROTHERS, INC.	16	3370.9	752	38.24	0.00	643	NO
0730104	JIMMIE CROWDER EXCAVATING	16	3367.3	752	38.28	22.80	644	NO
7770100	C.W. ROBERTS CONTRACTING, INC.	16	3370.8	752.7	38.94	0.00	657	NO
0730068	FAIRCHILD CREMATION SERVICES, INC.	16	3373.5	754.2	40.61	0.30	690	NO
0390009	COASTAL LUMBER CO	16	3394.3	747.1	41.51	90.00	708	NO
0730052	TERMINAL SERVICE COMPANY	16	3373.1	755.2	41.57	0.00	709	NO
0730057	TALLA - COMM INDUSTRIES INC.	16	3367.3	756.6	42.87	0.00	735	NO
0730010	FLORIDA STATE UNIVERSITY	16	3367.91	756.97	43.22	7.50	742	NO
0630028	SPANISH TRAIL LUMBER CO., LLC	16	3399.09	681.33	43.89	233.32	756	NO
0730065	STEINER CORP. DBA ALSCO, INC	16	3368.3	759	45.23	1.89	783	NO
0730069	CEMEX INC	16	3369.9	759.6	45.82	0.00	794	NO
0630046	BAXTER'S ASPHALT & CONCRETE, INC. DBA DO	16	3392.93	673.92	46.22	0.30	802	NO
7770255	TALLAHASSEE REDI-MIX CO.	16	3363.26	759.68	46.32	0.68	804	NO
0730009	FLORIDA A&M UNIVERSITY	16	3368.9	760.5	46.72	13.57	812	NO
0730062	DEPARTMENT OF MANAGEMENT SERVICES	16	3370.2	760.9	47.12	0.18	820	NO
0730060	MCNEILL COMPANY INC.	16	3364.6	761.7	48.17	0.00	841	NO
0730042	CULLEY & SONS FUNERAL HOME	16	3372.5	765.2	51.50	0.38	908	NO
0630052	ANDERSON MATERIALS CO., INC.	16	3401.25	672.31	52.21	49.00	922	NO
7775064	ANDERSON COLUMBIA CO., INC.	16	3401.19	672.12	52.32	7.98	924	NO
0730034	MITCHELL BROTHERS, INC.	16	3372.1	766.2	52.48	14.80	928	NO
7770024	COUCH READY MIX USA	16	3406	670	56.98	1.05	1018	NO
0630002	BAXTER ASPHALT & CONCRETE	16	3406.9	666.7	60.11	42.96	1080	NO

Table F-15 Summary of North Carolina Screening of Florida Competing PM10 Sources Within 100 km of Hosford								
		Utm Coordinates						
Facility Id	Owner/Company	ZONE	NORTH (Km)	EAST (Km)	Distance To Gp Km	Potential (Tpy)	Threshold	Include In Model
0630041	GOLDEN PEANUT COMPANY	16	3416.9	675.2	61.09	1.80	1100	NO
1290001	TALLAHASSEE CITY PURDOM GENERATING STA.	16	3339.97	769.5	63.08	700.40	1140	NO
0630039	CLOVER LEAF GIN, INCORPORATED	16	3416.3	670.3	63.85	82.60	1155	NO
0630031	WHITE CONSTRUCTION COMPANY	16	3403.5	654.2	68.58	30.62	1250	NO
0630040	GOLDEN PEANUT COMPANY	16	3407.7	655.1	70.00	0.20	1278	NO
0650004	FLORIDA ROCK INDUSTRIES. INC.	16	3376	785.5	72.01	0.78	1318	NO
0370008	FRANKLIN COUNTY BOARD OF COMMISSIONERS	16	3297.11	708.64	72.61	76.87	1330	NO
7770049	WHITE CONSTRUCTION COMPANY, INC.	16	3417.2	657.8	73.52	4.24	1348	NO
0050031	BAY COUNTY BOARD OF COUNTY COMMISSIONERS	16	3349.5	642.4	74.15	59.57	1361	NO
7775029	ANDERSON COLUMBIA CO., INC.	16	3418.74	656.12	75.80	12.00	1394	NO
0050038	TRIANGLE CONSTRUCTION ROAD BUILDING INC.	16	3347	638.8	78.30	11.50	1444	NO
1330006	JERKINS, INCORPORATED	16	3383.72	635.57	79.49	0.65	1468	NO
1330037	ANDERSON COLUMBIA CO., INC.	16	3404.73	640.29	81.48	14.90	1508	NO
0630045	WASTE MANAGEMENT INC. OF FLORIDA	16	3423.09	650.47	82.92	0.37	1536	NO
0050008	G.A.C. CONTRACTORS INC.	16	3343.7	634.9	83.01	44.29	1538	NO
0050029	GULF COAST CREMATORY SER	16	3343.9	634.3	83.52	1.78	1548	NO
7774815	WHITE CONSTRUCTION COMPANY, INC.	16	3397.47	633.93	84.60	12.50	1570	NO
0050078	CITY OF LYNN HAVEN	16	3344.4	632.07	85.50	1.50	1588	NO
0650001	JEFFERSON POWER LC	17	3377.6	223.9	86.49	155.40	1608	NO
0450007	CEMEX, INC.	16	3299.51	662.91	86.56	0.13	1609	NO
0450002	ARIZONA CHEMICAL COMPANY	16	3299.62	661.85	87.10	91.48	1620	NO
1230030	WHITE CONSTRUCTION COMPANY	17	3340.7	218.3	87.19	47.15	1622	NO
0050001	ARIZONA CHEMICAL COMPANY	16	3335.4	633.1	87.61	123.86	1630	NO
0050009	STONE CONTAINER CORPORATION	16	3335.1	632.8	88.00	2070.65	1638	YES
7775107	SOUTHEASTERN LANDSCAPE INC	16	3337.9	631.6	88.07	2.40	1639	NO
0050005	ANDERSON COLUMBIA CO., INC.	16	3338.29	631.4	88.11	28.80	1640	NO
0050052	TEXTURED COATINGS OF AMERICA,INC.	16	3338.5	631.3	88.13	0.00	1641	NO
0050034	WPC FLORIDA LLC	16	3339.3	630.9	88.23	0.00	1643	NO
0050043	EWELL INDUSTRIES, INC.	16	3339.1	630.9	88.30	0.00	1644	NO
0050051	HUMANE SOCIETY OF BAY COUNTY.	16	3338.8	630.7	88.59	2.63	1650	NO
0050053	WPC FLORIDA LLC	16	3338.7	630.7	88.62	0.00	1650	NO
0050066	COUCH READY MIX USA	16	3338.77	630.07	89.19	0.03	1662	NO
0050040	HONEYWELL FRICTION MATERIALS	16	3346.4	627.5	89.33	54.60	1665	NO
1230044	FLORIDA ROCK INDUSTRIES, INC.	17	3318.02	207.8	89.54	0.00	1669	NO
0050073	MACHRISTE CREMATORY	16	3339.6	628.98	89.94	0.51	1677	NO
0050045	GULF TERMINAL CORPORATION	16	3335.23	630.51	90.07	1.16	1679	NO
7770062	C W ROBERTS CONTRACTING INC	16	3340.28	628.09	90.55	6.50	1689	NO
0050014	GULF POWER COMPANY	16	3349.08	625.03	91.08	4922.74	1700	YES
0050081	WILSON FUNERAL HOME	16	3339.14	627.52	91.47	2.00	1707	NO
7774810	AMERICAN SAND & X-CAVATION	16	3362.17	622.1	91.98	2.00	1718	NO
0630011	REX LUMBER, LLC	16	3425.87	639.59	93.15	41.28	1741	NO
	Georgia Sources							
13 087 00013	ENGELHARD CORP	16	3402.79	739.89	42.27	2711	723	YES
13 087 00037	ENGELHARD CORP	16	3402.79	739.89	42.27	2158	723	YES
13 087 00001	MILWHITE CO	16	3405.19	739.5	43.95	196	757	NO
13 087 00002	IMC AGRIBUSNESS	16	3421	729.09	53.69	248	952	NO
13 087 00006	FLOYD BROS ASPHALT	16	3424.19	726.29	56.06	60	999	NO
13 087 00014	GEORGIA DEPARTMENT OF TRAN	16	3441.09	717.39	71.64	6	1311	NO
13 131 00019	HARDAWAY CO	16	3417.59	772.59	75.94	76	1397	NO

Table F-16 PM10 NAAQS Analysis Modeling Parameters for Competing Sources

	Model ID	X (m)	Y[a] (m)	Stack HT (ft)	Stack HT (m)	Diameter (ft)	Diameter (m)	Exit Temp (F)	Exit Temp (K)	Velocity (ft/s)	Velocity (m/s)	Potential (lb/hr)	PM10 Emission Rate (g/s)
0630014 GULF POWER COMPANY													
Boiler #1	PSRC1	-11405	26292	150	45.73	13.5	4.12	330	438.56	40	12.20	64.6	8.14
Boiler #1	PSRC2	-11405	26292	150	45.73	13.5	4.12	330	438.56	40	12.20	193.7	24.41
Boiler #2	PSRC3	-11405	26292	150	45.73	13.5	4.12	330	438.56	40	12.20	193.7	24.41
Boiler #2	PSRC4	-11405	26292	150	45.73	13.5	4.12	330	438.56	40	12.20	64.6	8.14
0730003 CITY OF TALLAHASSEE													
Boiler #1	PSRC5	35725	2192	200	60.98	11	3.35	260	399.67	39.2	11.95	270.9	34.13
Boiler #1	PSRC6	35725	2192	200	60.98	11	3.35	260	399.67	39.2	11.95	90.3	11.38
COMBUSTION TURBINE #1	PSRC7	35725	2192	29	8.84	9.2	2.80	802	700.78	114.4	34.88	2.78	0.35
COMBUSTION TURBINE #2	PSRC8	35725	2192	30	9.15	14.7	4.48	874	740.78	69.4	21.16	4.54	0.57
BOILER #2	PSRC9	35725	2192	250	76.22	14	4.27	220	377.44	68.9	21.01	250	31.50
BOILER #2	PSRC10	35725	2192	250	76.22	14	4.27	220	377.44	68.9	21.01	697.5	87.88
0050009 STONE CONTAINER CORPORATION													
RECOVERY BOILER #1 WITH ESP	PSRC11	-81005	-34408	230	70.12	9.1	2.77	325	435.78	76.9	23.45	90	11.34
LIME KILN	PSRC12	-81005	-34408	60	18.29	6.7	2.04	168	348.56	22	6.71	29.83	3.76
LIME SLAKER	PSRC13	-81005	-34408	65	19.82	2.9	0.88	175	352.44	15	4.57	14	1.76
BARK BOILER #3	PSRC14	-81005	-34408	213	64.94	7.83	2.39	137	331.33	86	26.22	109.5	13.80
BARK BOILER #4	PSRC15	-81005	-34408	213	64.94	7.83	2.39	143	334.67	92.5	28.20	86.7	10.92
RECOVERY BOILER #2	PSRC16	-81005	-34408	230	70.12	9.1	2.77	325	435.78	76	23.17	112.5	14.17
DISSOLVING TANK #2	PSRC17	-81005	-34408	233	71.04	6	1.83	165	346.89	25.3	7.71	12.37	1.56
#1 SMELT DISSOLVING TANK	PSRC18	-81005	-34408	233	71.04	5.9	1.80	174	351.89	26.8	8.17	12.37	1.56
0050014 GULF POWER COMPANY													
BOILER NUMBER 1 -	PSRC19	-88775	-20428	199	60.67	18	5.49	260	399.67	102.7	31.31	583.44	73.51
BOILER NUMBER 1 -	PSRC20	-88775	-20428	199	60.67	18	5.49	260	399.67	102.7	31.31	194.48	24.50
BOILER NUMBER 2 -	PSRC21	-88775	-20428	199	60.67	18	5.49	260	399.67	102.7	31.31	224.62	28.30
BOILER NUMBER 2 -	PSRC22	-88775	-20428	199	60.67	18	5.49	260	399.67	102.7	31.31	673.86	84.90
COMBUSTION TURBINES A&B	PSRC23	-88775	-20428	33	10.06	13.7	4.18	1200	921.89	120.9	36.86	33.09	4.17
UNIT 4: 170 MW CT1	PSRC24	-88775	-20428	121	36.89	16.8	5.12	186	358.56	73.8	22.50	21.5	2.71
UNIT 5: 170 MW CT2	PSRC25	-88775	-20428	121	36.89	16.8	5.12	186	358.56	73.8	22.50	21.5	2.71
1308700013 ENGELHARD CORP													
Merged Stacks	PSRC26	26085	33282	6	1.829	0.5	0.152	400	477.444	280.07	85.387	940.50	118.50

a- Position is relative to local coordinates based on emission point 1B as (0,0).

Table F-17 presents the screening of NOx sources. Facility-wide emissions from 6 facilities exceeded the threshold, and are included in the NAAQS inventory. Table F-18 presents the individual stack parameters for sources at these facilities.

Table F-17 Summary Of North Carolina Screening Of Florida Competing NO2 Sources Within 100 Km of Hosford

Facility Id	Owner/Company	Utm Coordinates			Distance To GP (km)	Potential NO2 (tpy)	Threshold	Include In Model
		Zone	North (Km)	East (Km)				
7774811	C. W. ROBERTS CONTRACTING, INC.	16	3365.16	710.96	5.21	11.7	12	NO
0390029	FLORIDA GAS TRANSMISSION COMPANY	16	3377.4	719.9	9.96	1403.07	107	YES
0770009	DG ENERGY SOLUTIONS, LLC	16	3358.1	709.4	12.25	140	153	NO
0390033	BEVIS HOLDINGS	16	3386.1	732.6	25.06	0.9855	409	NO
0390005	ENGELHARD CORPORATION	16	3387.5	732.6	26.01	18.47	428	NO
0770007	NORTH FLORIDA LUMBER	16	3358.88	689.54	26.49	29.2365	438	NO
0630014	GULF POWER COMPANY	16	3395.8	702.4	28.62	1348.8	480	YES
0390004	FLORIDA DEPT. OF CHILDREN AND FAMILIES	16	3399.2	707.6	30.30	132.495	514	NO
0730003	CITY OF TALLAHASSEE	16	3371.7	749.53	35.81	8898.9	624	YES
0730104	JIMMIE CROWDER EXCAVATING	16	3367.3	752	38.28	47.8	674	NO
0730068	FAIRCHILD CREMATION SERVICES, INC.	16	3373.5	754.2	40.61	0.1934	720	NO
0390009	COASTAL LUMBER CO	16	3394.3	747.1	41.51	58.9	738	NO
0730010	FLORIDA STATE UNIVERSITY	16	3367.91	756.97	43.22	95.23	772	NO
0630028	SPANISH TRAIL LUMBER CO., LLC	16	3399.09	681.33	43.89	71.27	786	NO
0730065	STEINER CORP. DBA ALSCO, INC	16	3368.3	759	45.23	5.4093	813	NO
0730009	FLORIDA A&M UNIVERSITY	16	3368.9	760.5	46.72	28.47	842	NO
0730062	DEPARTMENT OF MANAGEMENT SERVICES	16	3370.2	760.9	47.12	2.92	850	NO
0730034	MITCHELL BROTHERS, INC.	16	3372.1	766.2	52.48	23.4	958	NO
1290001	TALLAHASSEE CITY PURDOM	16	3339.97	769.5	63.08	2500.3	1170	YES
0630039	CLOVER LEAF GIN, INCORPORATED	16	3416.3	670.3	63.85	2.1	1185	NO
0630031	WHITE CONSTRUCTION COMPANY	16	3403.5	654.2	68.58	8.31	1280	NO
7770049	WHITE CONSTRUCTION COMPANY, INC.	16	3417.2	657.8	73.52	29	1378	NO
0050031	BAY COUNTY BOARD	16	3349.5	642.4	74.15	236.1	1391	NO
0630045	WASTE MANAGEMENT INC. OF FLORIDA	16	3423.09	650.47	82.92	6.49	1566	NO
0050008	G.A.C. CONTRACTORS INC.	16	3343.7	634.9	83.01	13	1568	NO
7774815	WHITE CONSTRUCTION COMPANY, INC.	16	3397.47	633.93	84.60	24.7	1600	NO
0050078	CITY OF LYNN HAVEN	16	3344.4	632.07	85.50	2.5	1618	NO
0450002	ARIZONA CHEMICAL COMPANY	16	3299.62	661.85	87.10	93.29	1650	NO
0050001	ARIZONA CHEMICAL COMPANY	16	3335.4	633.1	87.61	229.95	1660	NO
0050009	STONE CONTAINER CORPORATION	16	3335.1	632.8	88.00	2037.04	1668	YES
7775107	SOUTHEASTERN LANDSCAPE INC	16	3337.9	631.6	88.07	15.4	1669	NO
0050005	ANDERSON COLUMBIA CO., INC.	16	3338.29	631.4	88.11	22.98	1670	NO
0050024	UNITED STATES AIR FORCE	16	3326.8	635.6	89.11	87.97	1690	NO
0050045	GULF TERMINAL CORPORATION	16	3335.23	630.51	90.07	15.5	1709	NO
7770062	C W ROBERTS CONTRACTING INC	16	3340.28	628.09	90.55	13.8	1719	NO
0050014	GULF POWER COMPANY	16	3349.08	625.03	91.08	13536.512	1730	YES
0050081	WILSON FUNERAL HOME	16	3339.14	627.52	91.47	3.3	1737	NO
7774810	AMERICAN SAND & X-CAVATION	16	3362.17	622.1	91.98	3.63	1748	NO
0630011	REX LUMBER, LLC	16	3425.87	639.59	93.15	4	1771	NO
		Georgia Sources						
13 087 00013	ENGELHARD CORP	16	3402.79	739.89	42.27	42	753	NO
13 087 00037	ENGELHARD CORP	16	3402.79	739.89	42.27	693.978	753	NO
13 087 00002	IMC AGRIBUSNESS	16	3421	729.09	53.69	607.999	982	NO

Table F-18. NO2 NAAQS Analysis Modeling Parameters for Competing Sources

EU DESCRIPTION	Model ID	X (m)	Y[a] (m)	Stack Ht (ft)	Stack Ht (m)	Stack Dia (ft)	Stack Dia (m)	Exit Temp (F)	Exit Temp (K)	Velocity (ft/s)	Velocity (m/s)	Potential (lb/hr)	NO2 Emission Rate (g/s)
0390029 FLORIDA GAS TRANSMISSION COMPANY													
RECIPROCATING (IC) ENGINE NO. 1401	SRC2	6095	7892	28	8.537	1.44	0.439	600	588.56	119.1	36.31	61.2	7.71
RECIPROCATING (IC) ENGINE NO. 1402	SRC3	6095	7892	28	8.537	1.44	0.439	600	588.56	119.1	36.31	61.2	7.71
RECIPROCATING (IC) ENGINE NO. 1403	SRC4	6095	7892	28	8.537	1.44	0.439	600	588.56	119.1	36.31	61.2	7.71
RECIPROCATING (IC) ENGINE NO. 1404	SRC5	6095	7892	28	8.537	1.44	0.439	700	644.11	119.1	36.31	40.6	5.12
RECIPROCATING (IC) ENGINE NO. 1405	SRC6	6095	7892	28	8.537	1.44	0.439	600	588.56	119.1	36.31	61.2	7.71
NATURAL GAS ENGINE-2,700BHP NO. 1406	SRC7	6095	7892	51	15.549	2.17	0.662	550	560.78	89	27.13	10.6	1.34
13,078 bhp Turbine Compressor Unit	SRC8	6095	7892	58	17.683	7.75	2.363	867	736.89	63.4	19.33	10.2	1.29
Unit No. 1408: New 15,700 bhp gas turbine	SRC9	6095	7892	62	18.902	7.6	2.317	909	760.22	79.1	24.12	14.1	1.78
0630014 GULF POWER COMPANY													
Boiler #1 (Phase I & II Acid Rain Unit)	SRC10	-11405	26292	150	45.732	13.5	4.116	330	438.56	40	12.20	439.08	55.32
Boiler #2 (Phase I & II Acid Rain Unit)	SRC11	-11405	26292	150	45.732	13.5	4.116	330	438.56	40	12.20	497.19	62.64
0730003 CITY OF TALLAHASSEE													
Boiler #1(Phase II Acid Rain Unit)	SRC12	35725	2192	200	60.976	11	3.354	260	399.67	39.2	11.95	396.9	50.01
COMBUSTION TURBINE #1	SRC13	35725	2192	29	8.841	9.2	2.805	802	700.78	114.4	34.88	51.28	6.46
COMBUSTION TURBINE #2	SRC14	35725	2192	30	9.146	14.7	4.482	874	740.78	69.4	21.16	83.54	10.53
BOILER #2 (Phase II Acid Rain Unit)	SRC15	35725	2192	250	76.220	14	4.268	220	377.44	68.9	21.01	750	94.50
BOILER #2 (Phase II Acid Rain Unit)	SRC16	35725	2192	250	76.220	14	4.268	220	377.44	68.9	21.01	750	94.50
1290001 TALLAHASSEE CITY PURDOM GENERATING STA.													
Boiler No.7 (Phase II Acid Rain Unit)	SRC17	55695	-29538	180	54.878	9	2.744	300	421.89	47.4	14.45	272.6	34.35
COMBUSTION TURBINE UNIT #1	SRC18	55695	-29538	38	11.585	10	3.049	880	744.11	83.8	25.55	42.24	5.32
COMBUSTION TURBINE UNIT #2-CT	SRC19	55695	-29538	38	11.585	10	3.049	880	744.11	83.8	25.55	42.24	5.32
AUXILIARY BOILER	SRC20	55695	-29538	30	9.146	2	0.610	420	488.56	21.2	6.46	0.53	0.07
Combustion Turbine-Unit No. 8	SRC21	55695	-29538	200	60.976	16.5	5.030	171	350.22	85.7	26.13	347	43.72
Combustion Turbine-Unit No. 8	SRC22	55695	-29538	200	60.976	16.5	5.030	171	350.22	85.7	26.13	347	43.72
0050009 STONE CONTAINER CORPORATION													
LIME KILN	SRC23	-81005	-34408	60	18.293	6.7	2.043	168	348.56	22	6.71	67	8.44
BARK BOILER #3	SRC24	-81005	-34408	213	64.939	7.83	2.387	137	331.33	86	26.22	168.8	21.27
BARK BOILER #4	SRC25	-81005	-34408	213	64.939	7.83	2.387	143	334.67	92.5	28.20	84	10.58
RECOVERY BOILER #2	SRC26	-81005	-34408	230	70.122	9.1	2.774	325	435.78	76	23.17	37.29	4.70
DISSOLVING TANK #2	SRC27	-81005	-34408	233	71.037	6	1.829	165	346.89	25.3	7.71	107.98	13.61
0050014 GULF POWER COMPANY													
BOILER NUMBER 1 - 1,944.8 MMBTU/HOUR	SRC28	-88775	-20428	199	60.671	18	5.488	260	399.67	102.7	31.31	1205.8	151.93
BOILER NUMBER 2 - 2,246.2 MMBTU/HOUR	SRC29	-88775	-20428	199	60.671	18	5.488	260	399.67	102.7	31.31	988.33	124.53
COMBUSTION TURBINES A&B - 542 MMBTU/HOUR	SRC30	-88775	-20428	33	10.061	13.7	4.177	1200	921.89	120.9	36.86	378.3	47.66
UNIT 4: 170 MW CT1 with HRSG and duct burner	SRC31	-88775	-20428	121	36.890	16.8	5.122	186	358.56	73.8	22.50	82.9	10.45
UNIT 4: 170 MW CT1 with HRSG and duct burner	SRC32	-88775	-20428	121	36.890	16.8	5.122	186	358.56	73.8	22.50	82.9	10.45
UNIT 4: 170 MW CT1 with HRSG and duct burner	SRC33	-88775	-20428	121	36.890	16.8	5.122	186	358.56	73.8	22.50	113.2	14.26
UNIT 5: 170 MW CT2 with HRSG and duct burner	SRC34	-88775	-20428	121	36.890	16.8	5.122	186	358.56	73.8	22.50	82.9	10.45
UNIT 5: 170 MW CT2 with HRSG and duct burner	SRC35	-88775	-20428	121	36.890	16.8	5.122	186	358.56	73.8	22.50	82.9	10.45
UNIT 5: 170 MW CT2 with HRSG and duct burner	SRC36	-88775	-20428	121	36.890	16.8	5.122	186	358.56	73.8	22.50	113.2	14.26

a- Position is relative to local coordinates based on emission point 1B as (0,0).

Receptors

For the NAAQS analyses, G-P used receptor spacing identical to the spacing for the significant impact analysis. For each pollutant, these receptors extended out to the SID. If the maximum impact location is in an area with receptor spacing greater than 100 m and not on the extreme edge of the receptor field, then G-P also performed a refined analysis with additional receptors. Refined receptors are spaced apart at 100 m intervals, and extend from the receptor of interest out at least 500 m to assure that the analysis identifies the maximum impact.

F.2.9 PSD CLASS II INCREMENT ANALYSIS

Purpose and Methodology

As discussed in the result section (Section F.3), preliminary modeling of the proposed project indicated a significant impact (*i.e.*, maximum impact at or above the PSD significance levels) for NO_2 and PM_{10}. Therefore, PSD review requires G-P to perform a full air quality analysis to demonstrate compliance with the PSD Class II Increments. The Increment impact analysis predicts the maximum ambient air concentration due to all Mill sources and off-site sources within the screening areas that affect consume increment. The total of these concentrations must be less than the PSD Increment, as listed in Table F-19.

Table F-19. PSD Class II Increments for Modeled Pollutants, G-P Hosford

Pollutant	Averaging Time	Allowable PSD Increment ($\mu g/m^3$)	Form of Standard
PM_{10}	24-hour	30	High-second-highest for each year
	Annual	17	Annual Mean
NO_2	Annual	25	Annual Mean

Inventory - GP

In contrast to the NAAQS/AAQS analysis, the Increment inventory only includes

- Increase or decreases in actual emissions for sources after the minor source baseline date
- Increases or decreases in emissions for major sources after the major source baseline date due to a change in the method of operation

Because the Mill is a major source, all emission increases after the major source baseline due to a change in the method of operation consume increment. Other types of emission increases, such as increase in utilization, only affect (*i.e.*, consume or expand) PSD increment after the minor source baseline date is set. Table F-20 summarizes the baseline dates.

Table F-20. Summary of PSD Class II Increment Baseline Dates, Liberty County		
Pollutant	Major Source Baseline Date	Minor Source Baseline Date
PM_{10}	January 6, 1975	May 2000
SO_2	January 6, 1975	May 2000
NO_2	February 8, 1988	May 2000

The minor source baseline date was triggered by the application for permit to construct the Hosford OSB plant in May 2000, thus the increment-affecting emissions are the total emissions from this facility. Tables F-21 and F-22 summarize the PM_{10} and NOx increment-affecting emissions, respectively.

Table F-21. Summary of Increment-Affecting PM10 Emissions, G-P Hosford Mill.

Emission Pt ID	Model ID	Source Description	Potential PM (lbs/hr)	Potential PM (tons/yr)
001	EP-1A	Dryer RTO Stack A	21.3	93.294
001	EP-1B	Dryer RTO Stack B	21.3	93.294
002	EP-2	Press Vent RTO Stack	3.61	15.8118
003	EP-3	Screen Fines/Saw Trim Baghouse	2.6	11.388
004	EP-4	Saw Trim/Finishing Line Baghouse	1.34	5.8692
005	EP-5	Mat Reject/Flying Saw Baghouse	2.3	10.074
006	EP-6	Specialty Saw/Sander Baghouse	2.2	9.636
007	EP-7	Fuel System Baghouse	0.4	1.752
008	EP-8	Forming Bins Baghouse	1.96	8.5848
009	EP-9	Hammermill/Dry Fuel Sys Baghouse	2.65	11.607
010	EP-10	Thermal Oil Heating Sys ESP	8	35.04
011	PDBARK1	Debarker 1	0.3133	1.372254
011	PDBARK2	Debarker 2	0.3133	1.372254
011	PDBARK3	Debarker 3	0.3133	1.372254
011	BARKHOG	Bark hog	0.018	0.07884
011	BARKPILE	Bark Pile	0.020	0.0876
011	TP1	Transfer Point	0.0000331	0.000145
011	TP2	Transfer Point	0.0000331	0.000145
011	TP3	Transfer Point	0.0000331	0.000145
011	TP4	Transfer Point	0.0000331	0.000145
011	TP5	Transfer Point	0.0000331	0.000145
011	TP6	Transfer Point	0.0000331	0.000145
011	TP7	Transfer Point	0.0000331	0.000145
011	ROADA1	Entry Road	0.057	0.25
011	ROADA2	Entry Road	0.057	0.25
011	ROADA3	Entry Road	0.057	0.25
011	ROADA4	Entry Road	0.057	0.25
011	ROADB1	Shipping Road	0.009	0.04
011	ROADB2	Shipping Road	0.009	0.04
011	ROADB3	Shipping Road	0.009	0.04
011	ROADC1	Service Road	0.00002	0.0001
011	ROADC2	Service Road	0.00002	0.0001
011	ROADC3	Service Road	0.00002	0.0001
011	ROADC4	Service Road	0.00002	0.0001
011	ROADC5	Service Road	0.00002	0.0001
011	ROADC6	Service Road	0.00002	0.0001
011	ROADC7	Service Road	0.00002	0.0001
011	ROADC8	Service Road	0.00002	0.0001
011	ROADC9	Service Road	0.00002	0.0001

Table F-21. Summary of Increment-Affecting PM10 Emissions, G-P Hosford Mill.

Emission Pt ID	Model ID	Source Description	Potential PM (lbs/hr)	Potential PM (tons/yr)
011	ROADC10	Service Road	0.00002	0.0001
011	ROADC11	Service Road	0.00002	0.0001
011	ROADC12	Service Road	0.00002	0.0001
011	ROADC13	Service Road	0.00002	0.0001
011	ROADC14	Service Road	0.00002	0.0001
011	ROADC15	Service Road	0.00002	0.0001
011	ROADD1	Log Delivery Road	0.037	0.16
011	ROADD2	Log Delivery Road	0.037	0.16
011	ROADD3	Log Delivery Road	0.037	0.16
011	ROADD4	Log Delivery Road	0.037	0.16
011	ROADD5	Log Delivery Road	0.037	0.16
011	ROADD6	Log Delivery Road	0.037	0.16
011	ROADD7	Log Delivery Road	0.037	0.16
011	ROADD8	Log Delivery Road	0.037	0.16
011	ROADD9	Log Delivery Road	0.037	0.16
011	ROADD10	Log Delivery Road	0.037	0.16
011	ROADD11	Log Delivery Road	0.037	0.16
011	ROADD12	Log Delivery Road	0.037	0.16
011	ROADD13	Log Delivery Road	0.037	0.16
011	ROADD14	Log Delivery Road	0.037	0.16
011	ROADD15	Log Delivery Road	0.037	0.16
011	ROADD16	Log Delivery Road	0.037	0.16
011	ROADD17	Log Delivery Road	0.037	0.16
011	ROADD18	Log Delivery Road	0.037	0.16
011	ROADD19	Log Delivery Road	0.037	0.16
011	ROADD20	Log Delivery Road	0.037	0.16

Table F-22. Summary of Nitrogen Dioxide Emissions Affecting PSD Increment. G-P Hosford Mill				
			Emission Rates	
			Potential	Potential
Emission Pt ID	Model ID	Source Description	(lb/hr)	(tons/yr)
EP_1 A	EP-1A	Dryer RTO 1	37.9	166
EP_1 B	EP-1B	Dryer RTO 2	37.9	166
EP_2	EP-2	Press RTO	13.5	59.13
EP_10	EP-10	Thermal Oil Heater	6	26.28
		Total All Sources:	95.3	417.41

Inventory – Competing Sources

A full analysis must include the emissions of competing sources. In contrast to the NAAQS analysis, the PSD Increment analysis only includes emissions from competing sources that affect increment. FDEP identified several sources within 100 km of the Mill that consume increment. G-P modeled all PSD-consuming competing sources. For this analysis, G-P did not screen the competing sources with the North Carolina Screening Technique. Table F-23 presents a summary of competing sources within 100 km of the Mill that consume increment.

Table F-23. Summary of PSD-Consuming Emissions from Competing Sources				
			Emissions Affecting Increment (tpy)	
Facility ID	Facility	Site City	PM10	NO_X
7300003	Purdom Plant, FL	Tallahassee	85.1	278.1
1290001	Hopkins Plant, FL	Tallahassee	1018.5	0
1308700013	Englehard Corporation, GA	Attapulgus	72.2	66
		Total	1175.8	344.1

Table F-24 presents the modeling parameters for the PSD-affecting competing sources.

Table F-24 PSD Increment Analysis Modeling Parameters for Competing Sources

Facility Source Description	Model ID Name	Location (m) [a] X	Location (m) [a] Y	Emission Rate (g/s) PM10	Emission Rate (g/s) NO2	Stack Height (m)	Stack Diameter (m)	Exit Temper. (K)	Exit Velocity (m/s)
7300003 City of Tallahassee S.O.Purdom Plant									
Unit No. 8	TALPURD8	55695	-29538	2.14	8	61.0	5.00	353	15.38
Cooling Tower	TALPCOOL	55695	-29538	0.30		13.4	10.08	305	7.09
Gas Turbines	TALPURGT	55695	-29538	0.01		11.6	3.05	744	25.56
1290001 City of Tallahassee A.B.Hopkins Plant									
Unit No. 2	TALHOPK4	35725	2192	29.30		76.2	4.27	400	21.00
1308700013 ENGELHARD CORP									
Flash Dryer #3	ENGLE1	26085	33282	0.24		37	0.91	422	11.28
Flash Dryers #4 & #5	ENGLE2	26085	33282	0.49		40	0.76	402	15.24
A1; F1; F2	ENGLE3	26085	33282	0.16		32	0.30	293	13.11
A2; A3; D4; E12 to E25	ENGLE4	26085	33282	0.10		26	0.30	293	13.11
B1; B2; B3; E1; F3	ENGLE5	26085	33282	0.15		17	0.30	293	13.11
C77-78;C83-84; C114;C116	ENGLE6	26085	33282	0.15		22	0.24	293	6.52
C79 and C117	ENGLE7	26085	33282	0.05		35	0.52	293	3.57
C81; C82; C121; C125	ENGLE8	26085	33282	0.54	0.6	33	0.30	389	18.90
Calciners 3 and 4	ENGLE9	26085	33282	0.08	1.3	20	5.95	389	11.89
C126	ENGLE10	26085	33282	0.11		11	3.35	316	6.40

a- Position is relative to local coordinates based on emission point 1B as (0,0).

Receptors

For the PSD Increment analyses, G-P used receptor spacing identical to the spacing for the NAAQS analyses.

F.2.9 PSD CLASS I ANALYSES

Generally, if the project site is within 100 kilometers (km) of a PSD Class I area, a significant impact analysis is also performed at the PSD Class I area. The nearest PSD Class I areas to the Mill are the Saint Marks National Wilderness Area and the Bradwell Bay National Wilderness Area. Attachment E presents the ambient impact analysis for these PSD Class I areas.

F.2.10 SOURCE IMPACT ANALYSIS RESULTS

Significant Impact Analysis

Carbon Monoxide

By modeling the emissions that would result from the project. G-P determined that the proposed project will not have a significant CO impact. Therefore. G-P is not required to conduct a full analysis.

Table F-25. Significant Impact Analysis Results. CO G-P Hosford

Averaging Period	Year	Maximum Predicted Impact ($\mu g/m^3$)	Receptor Location (a) East (m)	Receptor Location (a) North (m)	Significant Impact Level ($\mu g/m^3$)	Monitoring De minimis Concentration ($\mu g/m^3$)
1-hour	1986	43.73	-429.27	104.00	2.000	---
	1987	36.44	-500.00	0.00		
	1988	36.85	-477.70	16.51		
	1989	37.28	-429.27	104.00		
	1990	42.05	-429.27	104.00		
8-hour	1986	18.19	-332.41	278.99	500	575
	1987	16.16	-600.00	300.00		
	1988	16.86	-600.00	300.00		
	1989	11.96	752.90	496.25		
	1990	13.82	-206.31	506.81		

a- Position is relative to local coordinates based on emission point 1B as (0,0).

Nitrogen Dioxide

By modeling the emissions that would result from the project. G-P determined that the proposed project will have a significant NO_2 impact out to approximately 4.1 km from the Mill. Table F-26 presents the maximum distances to a significant impact for each of the five years. Figure F-8 presents the contours of the SIL.

Table F-26. Significant Impact Distance Results. NO_2 G-P Hosford

Averaging Period	Year	Maximum Distance to Significant Impact Maximum Predicted Impact (km)	Significant Impact Level ($\mu g/m^3$)
Annual	1986	2.1	1
	1987	4.1	
	1988	3.5	
	1989	1.5	
	1990	1.4	

Table F-27 presents the maximum predicted impacts from the significant impact analysis.

Table F-27. Significant Impact Analysis Results, NO_2 G-P Hosford						
Averaging Period	Year	Maximum Predicted Impact ($\mu g/m^3$)	Receptor Location (a)		Significant Impact Level ($\mu g/m^3$)	Monitoring De minimis Concentration ($\mu g/m^3$)
			East (m)	North (m)		
Annual	1986	1.19	-400.00	-1300.00	1	14
	1987	2.12	-297.57	-1143.10		
	1988	1.85	-297.57	-1143.10		
	1989	1.07	-197.58	-1141.73		
	1990	1.05	-97.59	-1140.37		

(a)- Position is relative to local coordinates based on emission point 1B as (0,0).

The maximum annual NO_2 impact due to the project is 2.12 $\mu g/m^3$, which is above the SIL of 1 $\mu g/m^3$. Therefore, G-P performed a full analysis for NO_2.

Particulate Matter

By modeling the emissions that would result from the project, G-P determined that the project will have a significant PM_{10} impact out to 6.1 km. Table F-28 presents the maximum distances to a significant impact for each of the five years.

Table F-28. Significant Impact Distance Results, PM_{10} G-P Hosford			
Averaging Period	Year	Maximum Distance to Significant Impact Maximum Predicted Impact (km)	Significant Impact Level ($\mu g/m^3$)
24-hour	1986	6.1	5
	1987	5.3	
	1988	6.1	
	1989	5.8	
	1990	4.0	
Annual	1986	3.0	1
	1987	5.1	
	1988	4.5	
	1989	3.0	
	1990	2.5	

Figure F-9 presents the contours of the SILs. Table F-29 presents the maximum predicted impacts from the PM_{10} significant impact analysis.

Table F-29 Significant Impact Analysis Results, PM_{10} G-P Hosford							
Averaging Period	Year	Maximum Predicted Impact (µg/m³)	Receptor Location (a)		Period Ending (YYMMDDHH)	Significant Impact Level (µg/m³)	Monitoring De minimis Concentration (µg/m³)
			East (m)	North (m)			
24-hour High 1st High	1986	24.86	-177.37	-552.50	86110124	5	10
	1987	25.56	-222.00	-542.60	87011224		
	1988	26.49	-177.37	-552.50	88010824		
	1989	31.81	536.80	309.70	89060924		
	1990	21.29	-227.40	-567.20	90122524		
Annual	1986	6.40	-222.00	-542.60	--	1	--
	1987	9.71	-227.40	-567.20	--		
	1988	8.29	-222.00	-542.60	--		
	1989	6.21	-222.00	-542.60	--		
	1990	4.98	-222.00	-542.60	--		

Note:
(a)- Position is relative to local coordinates based on emission point 1B as (0,0).
YY =Year, MM=Month, DD=Day, HH=Hour

The maximum 24-hour PM_{10} impact due to the project is 31.81 µg/m³, which is above the SIL and monitoring deminimis concentration of 5 and 13 µg/m³, respectively. In addition, the maximum annual impact of 9.71 µg/m³ exceeds the modeling significance level. Therefore, G-P performed a full analysis for PM_{10}.

Summary

The significant impact analysis determined that the project emission increase will cause a maximum impact above the SILs and the EPA monitoring deminimis concentrations for all modeled pollutants. Table F-30 summarizes the SIDs for each pollutant.

Table F-30. Summary Significant Impact Distance Results, G-P Hosford	
Pollutant	Significant Impact Distance(km)
CO	0
NO_2	4.6
PM_{10}	6.1

NAAQS Analysis

Nitrogen Dioxide

By modeling the total potential Mill emissions and competing source emissions, G-P determined that the maximum annual mean NO_2 predicted impact is 15.19 $\mu g/m3$. The maximum impact location is in an area dominated by competing sources. G-P refined the results with a receptor grid with 100m spacing. Table F-31 summarizes the NO_2 model results.

Table F-31. NO_2 NAAQS Analysis Results, G-P Hosford

Averaging Period	Year	Maximum Predicted Impact ($\mu g/m^3$)	Receptor Location (a) East (m)	North (m)
Annual	1986	10.23	5000.00	3500.00
	1987	15.19	5000.00	5000.00
	1988	11.35	5000.00	3500.00
	1989	7.74	5000.00	5000.00
	1990	6.35	5000.00	5000.00
Refined Analysis				
Annual	1987	15.19	5000.00	5000.00
	1989	7.74	5000.00	5000.00
	1990	6.35	5000.00	5000.00

(a)- Position is relative to local coordinates based on emission point 1B as (0,0).

G-P added a background concentration of 16.17 $\mu g/m^3$ to the modeling result. As summarized in Table F-32, when adding the background concentrations, the total annual concentration is 31.36 $\mu g/m^3$. This impact is less than the respective NAAQS of 100 $\mu g/m^3$. Therefore, G-P has demonstrated that the Mill emissions will not cause or contribute to a violation of the NAAQS.

Table F-32. NO_2 NAAQS Total Results G-P Hosford

Averaging Period	Maximum Predicted Impact ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
Annual	15.19	16.17	31.36	100

Particulate Matter – PM_{10}

By modeling the total potential Mill emissions and competing source emissions, G-P determined that the maximum PM_{10} predicted impacts are 41.23, and 11.81, $\mu g/m3$, for the 24-hour and annual averaging times, respectively. The maximum impact locations were in an area that did require additional refined receptor grids. Table F-33 summarizes the PM_{10} model results.

Table F-33. PM_{10} NAAQS Screening Analysis Results. G-P Hosford

Averaging Period	Year	Maximum Predicted Impact (µg/m³)	Receptor Location (a) East (m)	Receptor Location (a) North (m)	Period Ending (YYMMDDHH)
Annual	1986	7.26	-222.00	-542.60	--
	1987	11.81	-227.40	-567.20	--
	1988	10.07	-222.00	-542.60	--
	1989	7.26	-222.00	-542.60	--
	1990	6.20	-222.00	-542.60	--
24-Hour High 2nd High	1986	21.07	-177.37	-552.50	86102924
	1987	31.14	-855.15	-1065.23	87052824
	1988	37.41	6000.00	7000.00	88091224
	1989	29.31	536.80	309.70	89061024
	1990	28.70	6000.00	7000.00	90101724
Refined Analysis					
24-Hour High 2nd High	1988	41.23	6400.00	7000.00	88091224
	1990	28.80	6100.00	7000.00	90101724

(a)- Position is relative to local coordinates based on emission point 1B as (0.0).

G-P added background concentrations of 49 and 22 µg/m³ to the modeling results for the 24-hour and annual averaging periods, respectively. As summarized in Table F-34, when adding the background concentrations, the 24-hour average and annual concentrations are 90.23 and 33.81 µg/m³, respectively.

Table F-34 PM_{10} NAAQS Total Results, G-P Hosford

Averaging Period	Maximum Predicted Impact (µg/m³)	Background Concentration (µg/m³)	Total Concentration (µg/m³)	NAAQS (µg/m³)
Annual	11.81	22	33.81	50
24-Hour High 2nd High	41.23	49	90.23	150

These impacts are less than the respective NAAQS of 150 and 50 µg/m³. Therefore, G-P has demonstrated that the Mill emissions that reflect all project changes will not cause or contribute to a violation of the NAAQS. Figure F-10 presents the relative location of the maximum impacts for the NAAQS analyses.

PSD Class II Increment Analysis

Nitrogen Dioxide

By modeling all mill emissions and the increment-affecting emissions from the competing source, G-P determined that the maximum annual mean NO_2 increment predicted impact is 2.14 $\mu g/m^3$. The maximum impact location is in an area that did not require additional refined receptor grids. Table F-35 summarizes the NO_2 model results. This impact is less than the allowable increment of 25 $\mu g/m^3$. Therefore, G-P has demonstrated that the Mill emissions will not cause or contribute to a violation of the PSD Class II Increment.

Table F-35. NO_2 PSD Class II Increment Analysis Results, G-P Hosford

Averaging Period	Year	Maximum Predicted Impact ($\mu g/m^3$)	Receptor Location (a) East (m)	Receptor Location (a) North (m)	Allowable Increment ($\mu g/m^3$)
Annual	1986	1.20	-400.00	-1300.00	25
	1987	2.14	-297.57	-1143.10	
	1988	1.87	-297.57	-1143.10	
	1989	1.08	-197.58	-1141.73	
	1990	1.06	-97.59	-1140.37	

(a)- Position is relative to local coordinates based on emission point 1B as (0,0).

Particulate Matter – PM_{10}

By modeling the increment-affecting emissions from the Mill and competing source, G-P determined that the maximum PM_{10} increment predicted impacts are 27.52 and 9.50 $\mu g/m3$, for the 24-hour and annual averaging times, respectively. The maximum 24-hour impact location was in an area that did not require additional refined receptor grids. While the maximum annual impact location was in an area with receptor spacing greater than 100m, G-P did not refine this receptor due to its very low overall value (*i.e.*, 0.6% of the allowable increment). Table F-36 summarizes the PM_{10} model results. These impacts are less than the respective allowable increments of 30 and 17 $\mu g/m^3$. Therefore, G-P has demonstrated that the Mill emissions will not cause or contribute to a violation of the PSD Class II Increment. Figure F-11 summarizes the relative locations of the maximum impact locations for the PSD Class II Increment analyses.

Table F-36. PM_{10} PSD Class II Increment Analysis Results. G-P Hosford						
Averaging Period	Year	Maximum Predicted Impact ($\mu g/m^3$)	Receptor Location (a)		Period Ending (YYMMDDHH)	Allowable Increment ($\mu g/m^3$)
			East (m)	North (m)		
Annual	1986	6.27	-222.00	-542.60	--	17
	1987	9.50	-227.40	-567.20	--	
	1988	8.13	-222.00	-542.60	--	
	1989	6.11	-222.00	-542.60	--	
	1990	4.90	-222.00	-542.60	--	
24-Hour High 2nd High	1986	19.89	-129.67	-588.38	86110224	30
	1987	22.96	-222.00	-542.60	87103024	
	1988	22.41	-177.37	-552.50	88011024	
	1989	27.52	536.80	309.70	89061024	
	1990	18.21	-222.00	-542.60	90102424	

(a)- Position is relative to local coordinates based on emission point 1B as (0,0).

F.3. GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS

F.3.1 INTRODUCTION

PSD review rules require that controls required for emission sources using the Best Available Control Technology Analysis (see Attachment E) cannot be affected by a stack height that exceeds Good Engineering Practice (GEP) or any other dispersion technique. In other words, emissions rates specified in a source impact analysis must demonstrate compliance with stack heights at or below GEP, even if the physical height of the stack is greater. On July 8, 1985, EPA defined GEP stack height in the final stack height regulations (see 40 CFR 51.100(hh)). GEP stack height is defined as:

"The greater of:

(1) 65 meters, measured from the ground-level elevation at the base of the stack:

(2)

(i) For stacks in existence on January 12, 1979, and for which the owner or operator had obtained all applicable permits or approvals required under 40 CFR parts 51 and 52, Hg=2.5H, provided the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation.

Hg = good engineering practice stack height, measured from the ground-level elevation at the base of the stack

H = height of nearby structure(s) measured from the ground-level elevation at the base of the stack.

(ii) For all other stacks, Hg = H + 1.5L,

L = lesser dimension, height or projected width, of nearby structure(s) provided that the EPA, State or local control agency may require the use of a field study or fluid model to verify GEP stack height for the source

(3) The height demonstrated by a fluid model or a field study approved by the EPA, State or local control agency, which ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the source itself, nearby structures or nearby terrain features. "Nearby" is defined as a distance up to five times the lesser of the height or projected width dimensions of a structure or terrain feature but not greater than 0.8 kilometer (km).

Therefore, to determine if the stacks meet GEP regulations, G-P assembled stack construction dates, stack heights, and building information from the source impact analysis.

F.3.2 GEP CALCULATIONS

Hosford Mill Sources

Table F-37 presents a summary of stack construction dates and computed GEP values for the sources modeled at the Mill. All of the modeled stacks at the Hosford Mill were constructed after January 12, 1979. Therefore, the applicable GEP equation is: GEP = (Height of structure) + 1.5 x (Lesser of structure height or width).

Table F-37. Summary of Stack GEP Calculations, G-P Hosford

Stack Description	Model ID	Stack Construction Date	GEP Calculations (m) Structure Height (a)	Structure Width (a)	GEP Height Computed by 40 CFR 51.100(hh)
Dryer RTO Stack A	EP-1A	2004	26.67	41.42	66.68
Dryer RTO Stack B	EP-1B	2004	26.67	66.43	66.68
Press Vent RTO Stack	EP-2	2004	26.67	66.77	66.68
Screen Fines/Saw Trim Baghouse	EP-3	2004	26.67	61.29	66.68
Saw Trim/Finishing Line Baghouse	EP-4	2004	22.86	63.46	65.00
Mat Reject/Flying Saw Baghouse	EP-5	2004	26.67	62.65	66.68
Specialty Saw/Sander Baghouse	EP-6	2004	22.86	63.46	65.00
Fuel System Baghouse	EP-7	2004	26.67	61.54	66.68
Forming Bins Baghouse	EP-8	2004	26.67	68.05	66.68
Hammermill/Dry Fuel Sys Baghouse	EP-9	2004	26.67	61.42	66.68
Thermal Oil Heating Sys ESP	EP-10	2004	26.67	62.94	66.68

Note
(a) BPIP program selected the critical structure that produces the largest GEP value. Height and width shown is for the critical structure.

Table F-38 compares the computed GEP height to the physical stack height. As shown, the existing stacks are below the GEP height. Therefore, all G-P stacks included in the source impact analysis at their physical heights comply with GEP regulations.

Table. F-38. Comparison of Stack Heights to GEP Requirements. G-P Hosford			
Stack Description	Model ID	Final GEP Height (m)	Physical Stack Height(m)
Dryer RTO Stack A	EP-1A	66.68	54.87
Dryer RTO Stack B	EP-1B	66.68	54.87
Press Vent RTO Stack	EP-2	66.68	30.48
Screen Fines/Saw Trim Baghouse	EP-3	66.68	40.23
Saw Trim/Finishing Line Baghouse	EP-4	65.00	30.48
Mat Reject/Flying Saw Baghouse	EP-5	66.68	40.24
Specialty Saw/Sander Baghouse	EP-6	65.00	27.43
Fuel System Baghouse	EP-7	66.68	22.86
Forming Bins Baghouse	EP-8	66.68	32.00
Hammermill/Dry Fuel Sys Baghouse	EP-9	66.68	40.24
Thermal Oil Heating Sys ESP	EP-10	66.68	42.00

Off-site Sources

The definition of GEP states that the minimum GEP value is 65 meters. Among the competing sources modeled, only one stack exceeded 65 m. The stack is

- City of Tallahassee A.B.Hopkins Plant (ISCST3 ID TALHOPK4)

Data received from FDEP show a stack height of 76.2 meters for this source. FDEP did not indicate that the stack exceeded GEP, therefore G-P assumed the facility is in compliance with the standard.

F.4. AMBIENT AIR QUALITY ANALYSIS

Rule 40 CFR 52.21(m) describes the analyses of ambient air quality data required by PSD review. These requirements include pre-application and post-application analyses. Both of these requirements are exempted by Rule 40 CFR 52.21(i)(8) if the source impact analysis demonstrates that the emissions increase from the modification would cause air quality impacts less than the deminimis monitoring concentrations in all areas. The source impact analysis (Section F.3) for G-P Hosford concluded that the maximum impacts from the project for PM_{10} would exceed this concentration. Therefore, the rule exemption is not applicable.

F.4.1 PRE-APPLICATION ANALYSIS

G-P Hosford does not operate any ambient air quality monitors, and no ambient air monitors are operated within the significant impact areas. The G-P Hosford Mill is located in an area generally free from the impact of other sources associated with human activities. For these conditions, EPA guidance recommends that monitoring data from a 'regional' site may be used as representative data. To determine if existing data is appropriate, EPA guidance recommends three criteria: monitor location, data quality, and currentness of the data. Tables F-39 and F-40 summarizes the criteria for the available data collected in the state over the past three years:

For the first criteria, only the Pensacola and Panama City sites are located in areas not affected by urban activities such as significant vehicular emissions and are less than 250 km from the Mill.
For the second criteria, all monitors listed in the table include data collected within 3 years of this application. G-P believes that all the above data satisfies the data quality requirements of EPA. Thus, to meet the regional site criteria, G-P selected the ambient data from Escambia and Bay counties to determine the pre-application air quality.

Table F-39 Summary of NO_2 Ambient Monitoring Data Collected Near Hosford

Year	County	Station ID	Monitor Location	Number of Observations	Concentration Annual Average ($\mu g/m^3$)
2001	ESCAMBIA	12-033-0004	Pensacola / Ellyson Industrial Park	8649	16.1766
2002	ESCAMBIA	12-033-0004	Pensacola / Ellyson Industrial Park	8378	14.4837
2003	ESCAMBIA	12-033-0004	Pensacola / Ellyson Industrial Park	8462	13.7313

Table F-40 Summary of PM10 Ambient Monitoring Data Collected Near Hosford

Year	County	Station ID	Monitor Location	Number of Observations	Concentration: 2nd High 24 Hour Average ($\mu g/m^3$)	Concentration: Annual Average ($\mu g/m^3$)
2001	BAY	12-005-1004	Panama City / Cherry Street and Henderson Ave.	61	37	22
2002	BAY	12-005-1004	Panama City / Cherry Street and Henderson Ave.	61	49	21
2003	ESCAMBIA	12-033-0003	Pensacola / Ellyson Industrial Park	61	40	20

To meet the third EPA criteria, G-P selected the value reported in the most current year. G-P proposes to not conduct any ambient monitoring to satisfy the pre-application analysis. G-P selected the high-second-highest values for use in the source impact analysis. The following table summarizes the background selections:

Table F-41. Summary of Selected Background Concentrations for Hosford Mill Modeling Analyses			
Pollutant	Monitor Description	Averaging Period	Background Concentration ($\mu g/m^3$)
NO_2	ID: 12-033-0044 Escambia County Rural – Industrial: 2001 Annual Mean	Annual	16.7
PM_{10}	ID: 12-005-1004 Bay County Suburban – Commercial: 2002 High Second High and 2001 Annual Mean	24-hr	49
		Annual	22

The post-application analysis determines post-construction ambient monitoring needs, such as quantifying the effect of the Mill-wide emissions on air quality. EPA guidance recommends that post-construction monitoring is appropriate when:

1) the NAAQS is threatened, or
2) the modeling databases contain significant uncertainties.

G-P believes that neither of these conditions exists for this project. First, the results of the source impact analysis demonstrate that the maximum predicted impact by all Mill and competing sources is significantly less than the NAAQS. Second, the area of significant impact by the project is very isolated. Third, the modeling databases reflect data that FDEP has accepted for several PSD permit applications. Therefore, G-P believes that no post-application monitoring is necessary.

Appendix
North Carolina Screening Technique
Stack Merge Methodology
Stack Merging Calculations
Computer File Directory

To Mark Aguilar FAX (404)
From Steve Marks 230-8314

4 Pages
9737570-0100

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State of North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
S. Thomas Rhodes, Secretary

R. Paul Wilms
Director

July 22, 1985

Mr. Lewis Nagler
Air Management Branch
EPA Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Nagler:

Subject: A Screening Method for PSD

A simple screening procedure which is applicable to PSD has been developed by the North Carolina Air Quality Section. The "Screening Threshold" method is designed to rapidly and objectively eliminate from the emissions inventory those sources which are beyond the PSD impact area yet within the screening area, but are not likely to have significant interaction with the PSD source. Sources which are flagged by this procedure may then be evaluated with conventional screening techniques, or else be included in refined modeling.

Page I-C-18 of the PSD Workshop Manual does state "A simple screening model technique can be used to justify the exclusion of certain emissions...Such exclusions should be justified and documented." The "Screening Threshold" method is documented in the attachment.

We would very much appreciate your comments and ultimate approval. Please feel free to direct any questions or comments to me in writing or by phone at (919) 733-7015.

Sincerely,

Eldewins Haynes

Eldewins Haynes, Meteorologist
Air Permit Unit

Attachment

cc: Mr. Ogden Gerald
Mr. Mike Sewell
Mr. Sammy Amerson
Mr. Jerry Clayton
Mr. Richard Laster
Regional Air Engineers

"Screening Threshold" Method for PSD Modeling
North Carolina Air Quality Section

This method is best suited for situations where a PSD source has several sources outside its impact area, but within its screening area. The object is to find an effective means to minimize the number of such sources in a model, yet to include all sources which are likely to have a significant impact inside the impact area.

As a first-level screening technique, it is suggested to include those sources within the screening area when

$$Q \geq 20D$$

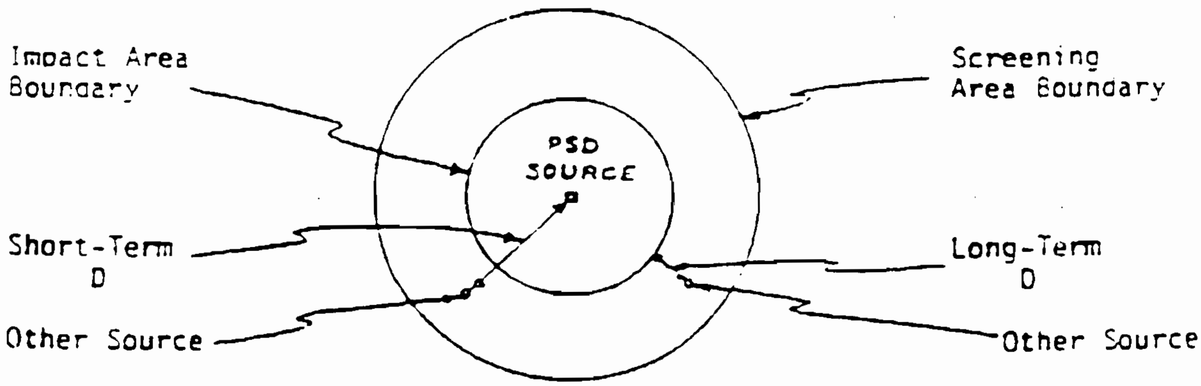
where Q is the maximum emission rate, in tons/year, of the source in the screening area; and D is a distance, in kilometers, from either:

a. the source in the screening area to the nearest edge of the impact area, for long-term analyses

or

b. the source in the screening area to the PSD source defining the impact area, for short-term analyses.

The figure below illustrates the difference between the long-term D and the short-term D.



This method does not preclude the use of alternate screening techniques or of more sophisticated screening techniques given the approval of the review agency. Also, this method does not prevent the review agency from specifying additional sources of interest in the modeling analysis.

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The justification for this "Screening Threshold Method" rests upon the following assumptions:

a. effective stack height = 10 meters
b. stability class D (neutral)
c. 2.5 meter/second wind speed
d. mixing height = 300 meters
e. Q = 20D = critical emission rate for a given pollutant
f. one-hour concentrations derived from figure 3-5D in Turner's WADE or from PTDIS.
g. 3-hour and 24-hour concentrations estimated using "Vol. 10R". Annual impacts are 1/7 of 24 hour impacts.

The results, for various distances, are shown in the table below:

D (km)	Q (T/yr)	1-hr Conc. ($\mu g/m^3$)	3-hr Conc. ($\mu g/m^3$)	24-hr Conc. ($\mu g/m^3$)	Annual Conc. ($\mu g/m^3$)
0.5	10	47	42	19	2.7
1.0	20	32	29	13	1.9
1.5	30	27	24	10	1.4
2.0	40	23	21	9	1.3
3	60	18	16	7	1.0
4	80	17	15	7	1.0
5	100	14	13	6	1
6	120	13	12	5	1
10	200	10	9	4	1
20	400	7	6	3	1
30	600	6	6	3	1
40	800	6	6	3	1
50	1000	7	6	3	1

The "Screening Threshold" method is conservative. Most sources either have effective stack heights greater than 10 meters, or they have several short stacks spread out over an industrial complex. Thus, actual modeled concentrations will most likely be lower than the "Screening Threshold" would indicate in the table above. One implication of the table is that all major sources within 5 km of the subject PSD source or within 5 km of the PSD source's impact area should be scrutinized before being exempted from the final emissions inventory.

The "Screening Threshold" method is in qualitative agreement with the suggestions on page I-C-18 of the Prevention of Significant Deterioration Workshop Manual (1980). On that page, it is suggested that a 100 T/Y source 10 km outside the impact area may be excluded from the analysis. The above table would exclude a 100 T/Y source more than 5 km beyond the impact area for long-term analyses or more than 5 km away from the PSD source for short-term analyses; if the source is inside the impact area, it must be included regardless of the "Screening

Threshold". The PSD Workshop Manual also states on page I-C-18 that a 10,000 T/Y source 40 km outside the impact area would probably have to be included in the increment analysis. By the "Screening Threshold" method, the critical distance D = Q/20 = 10,000/20 = 500 km. Thus a 10,000 T/Y source within 500 km would always be included for short-term and long-term analyses if within the screening area.

This "Screening Threshold" method is quick, inexpensive to execute, conservative, and consistent with the intent of the PSD Workshop Manual.

EPA-454/R-92-019

Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

October 1992

to the kilowatt-hours of electricity produced, which is proportional to the tonnage of coal used to produce the electricity. Fugitive emissions from an area source are likely to vary with wind speed and both atmospheric and ground moisture content. If pollutant emission data are not directly available, emissions can be estimated from fuel consumption or production rates by multiplying the rates by appropriate emission factors. Emission factors can be determined using three different methods. They are listed below in decreasing order of confidence:

1. Stack-test results or other emission measurements from an identical or similar source.
2. Material balance calculations based on engineering knowledge of the process.
3. Emission factors derived for similar sources or obtained from a compilation by the U.S. Environmental Protection Agency.[5]

In cases where emissions are reduced by control equipment, the effectiveness of the controls must be accounted for in the emissions analysis. The source operator should be able to estimate control effectiveness in reducing emissions and how this effectiveness varies with changes in plant operating conditions.

2.2 Merged Parameters for Multiple Stacks

Sources that emit the same pollutant from several stacks with similar parameters that are within about 100m of each other may be analyzed by treating all of the emissions as coming from a single representative stack. For each stack compute the parameter M:

$$M = \frac{h_s \, V \, T_s}{Q} \,, \tag{2.1}$$

where:

M = merged stack parameter which accounts for the relative influence of stack height, plume rise, and emission rate on concentrations

h_s = stack height (m)

V = $(\pi/4)\ d_s^2\ v_s$ = stack gas volumetric flow rate (m^3/s)

d_s = inside stack diameter (m)

v_s = stack gas exit velocity (m/s)

T_s = stack gas exit temperature (K)

Q = pollutant emission rate (g/s)

The stack that has the lowest value of M is used as a "representative" stack. Then the sum of the emissions from all stacks is assumed to be emitted from the representative stack; i.e., the equivalent source is characterized by h_{s_1}, V_1, T_{s_1} and Q, where subscript 1 indicates the representative stack and $Q = Q_1 + Q_2 + \ldots + Q_n$.

The parameters from dissimilar stacks should be merged with caution. For example, if the stacks are located more than about 100m apart, or if stack heights, volumetric flow rates, or stack gas exit temperatures differ by more than about 20 percent, the resulting estimates of concentrations due to the merged stack procedure may be unacceptably high.

2.3 Topographic Considerations

It is important to study the topography in the vicinity of the source being analyzed. Topographic features, through their effects on plume behavior, will sometimes be a significant factor in determining ambient ground-level pollutant concentrations. Important features to note are the locations of large bodies of water, elevated terrain, valley configurations, and general terrain roughness in the vicinity of the source.

Section 4.5.2 provides a screening technique for estimating ambient concentrations due to plume impaction at receptors located on elevated terrain features above stack height. The effects of elevated terrain below stack height can be accounted for in Sections 4.2 and 4.3. A screening technique for estimating concentrations under shoreline fumigation conditions is presented in Section 4.5.3. Any other topographic considerations, such as

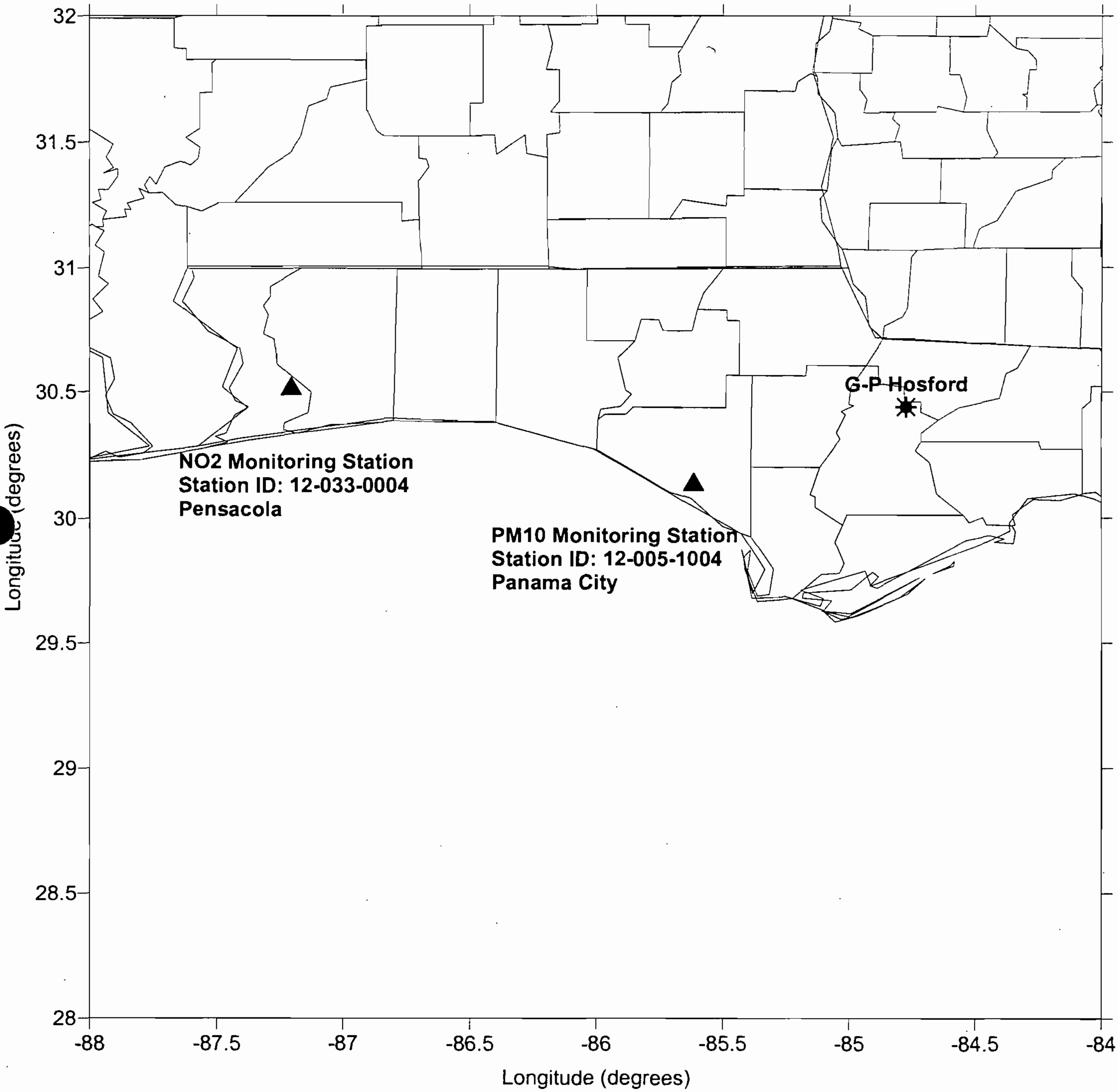
PM10 Stack Merging Calculations

Englehard Stack Merge Calculations								
Stack Number	Diameter (m)	Temp (K)	Flow (m3/s)	Stack Ht (m)	Emission Rate (g/s)	Velocity (m/s)	M	Emission Sum (g/s)
1.00	0.15	477.44	1.56	1.83	0.46	85.39	2955.63	118.49
1.00	0.15	477.44	1.56	1.83	0.46	85.39	2955.63	
1.00	0.15	477.44	1.56	1.83	0.46	85.39	2955.63	
2.00	0.21	355.22	0.17	13.72	0.17	4.82	4864.47	
2.00	0.46	338.56	0.94	6.10	0.26	5.75	7527.12	
2.00	0.46	338.56	0.94	6.10	0.20	5.75	9677.72	
3.00	0.46	338.56	0.78	6.10	0.14	4.74	11177.77	
3.00	0.37	298.00	1.98	10.37	0.55	18.87	11203.98	
3.00	0.37	298.00	1.98	10.37	0.55	18.87	11203.98	
4.00	1.22	341.33	22.79	5.49	2.88	19.52	14838.83	
4.00	0.91	319.11	6.65	26.22	2.99	10.12	18586.22	
4.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
5.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
5.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
5.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
6.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
7.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
8.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
9.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
10.00	0.91	355.22	10.20	32.01	4.40	15.52	26341.05	
11.00	0.21	344.11	0.47	28.96	0.17	13.20	27255.39	
12.00	0.46	338.56	0.78	6.10	0.06	4.74	27944.43	
13.00	0.91	410.78	23.26	5.49	1.78	35.42	29399.49	
14.00	1.07	388.56	14.27	32.01	4.40	15.97	40337.97	
15.00	1.07	388.56	14.27	32.01	4.40	15.97	40337.97	
16.00	1.07	388.56	14.27	32.01	4.40	15.97	40337.97	
18.00	0.24	344.11	0.33	12.20	0.03	7.08	48199.00	
19.00	1.07	388.56	21.07	32.01	4.40	23.57	59546.53	
20.00	1.07	388.56	21.07	32.01	4.40	23.57	59546.53	
21.00	1.07	388.56	21.07	32.01	4.40	23.57	59546.53	
1.00	1.83	476.89	5.40	42.07	1.75	2.06	61794.99	
1.00	1.83	476.89	5.40	42.07	1.75	2.06	61794.99	
1.00	1.83	476.89	5.40	42.07	1.75	2.06	61794.99	
2.00	1.83	476.89	5.40	42.07	1.75	2.06	61794.99	
2.00	0.61	298.00	0.57	12.20	0.03	1.94	71554.80	
2.00	0.52	338.56	5.10	26.83	0.63	24.17	73163.59	
3.00	0.52	338.56	5.10	26.83	0.63	24.17	73163.59	
3.00	0.52	338.56	5.10	26.83	0.63	24.17	73163.59	
3.00	0.15	298.00	0.28	25.91	0.03	15.52	76026.98	
4.00	0.15	298.00	0.28	25.91	0.03	15.52	76026.98	
4.00	0.15	298.00	0.28	28.96	0.03	15.52	84971.33	
4.00	0.61	394.11	7.08	26.52	0.86	24.26	85760.88	

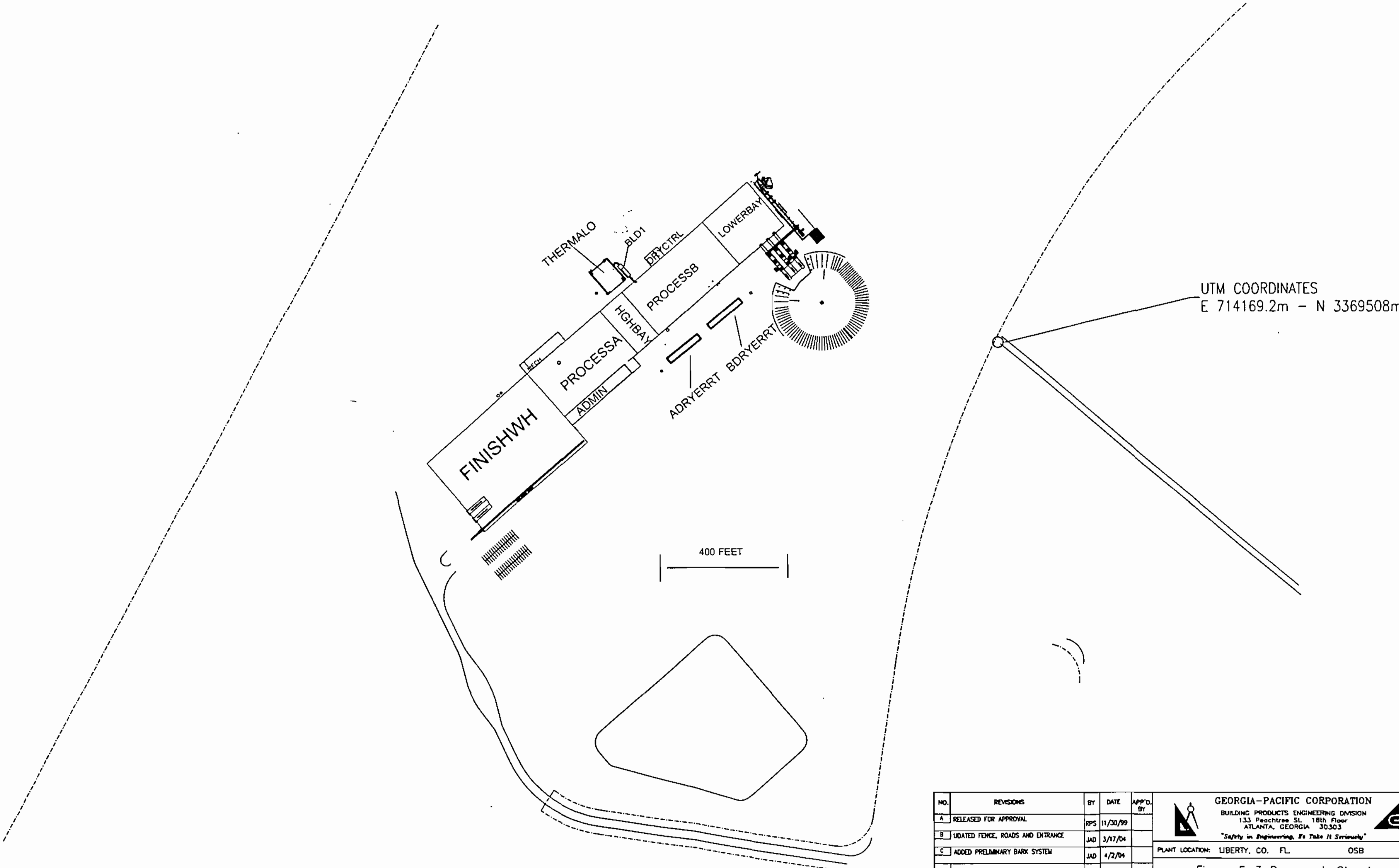
Englehard Stack Merge Calculations								
Stack Number	Diameter (m)	Temp (K)	Flow (m3/s)	Stack Ht (m)	Emission Rate (g/s)	Velocity (m/s)	M	Emission Sum (g/s)
5.00	0.24	350.78	0.33	21.95	0.03	7.08	88439.02	
5.00	0.49	327.44	2.83	23.17	0.20	15.16	106705.23	
5.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
6.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
6.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
6.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
22.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
22.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
23.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
23.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
24.00	0.91	355.22	10.20	32.01	1.01	15.52	115148.01	
24.00	0.21	355.22	0.57	16.77	0.03	15.84	117280.38	
25.00	0.24	298.00	0.68	16.77	0.03	14.66	118885.33	
25.00	1.83	477.44	4.76	47.56	0.86	1.81	125338.57	
25.00	1.83	477.44	4.76	47.56	0.86	1.81	125338.57	
25.00	1.83	477.44	4.76	47.56	0.86	1.81	125338.57	
25.00	0.21	298.00	0.47	25.91	0.03	13.20	126711.63	
25.00	0.24	298.00	0.94	25.91	0.06	20.21	126711.63	
26.00	0.76	321.89	33.75	25.91	2.16	74.00	130482.11	
26.00	0.15	298.00	0.47	27.13	0.03	25.87	132674.53	
26.00	0.15	298.00	0.47	27.13	0.03	25.87	132674.53	
27.00	1.07	321.89	0.47	26.22	0.03	0.53	138479.58	
28.00	1.83	477.44	4.76	47.56	0.75	1.81	144621.42	
29.00	1.83	477.44	4.76	47.56	0.75	1.81	144621.42	
30.00	1.83	477.44	4.76	47.56	0.75	1.81	144621.42	
30.00	0.40	321.89	0.47	28.96	0.03	3.83	152971.63	
30.00	1.83	366.33	4.07	14.94	0.14	1.55	154986.76	
31.00	1.07	355.22	14.27	32.01	1.01	15.97	161207.21	
32.00	1.07	355.22	14.27	32.01	1.01	15.97	161207.21	
33.00	1.07	355.22	14.27	32.01	1.01	15.97	161207.21	
34.00	0.30	298.00	0.94	16.77	0.03	12.94	163979.76	
35.00	0.91	476.89	10.10	42.07	1.18	15.38	171785.19	
36.00	0.91	476.89	10.10	42.07	1.18	15.38	171785.19	
37.00	0.30	298.00	0.94	17.68	0.03	12.94	172924.11	
38.00	0.15	388.56	0.47	27.13	0.03	25.87	172991.36	
39.00	0.24	366.33	0.47	29.27	0.03	10.11	175925.57	
40.00	0.52	366.33	3.78	25.91	0.17	17.91	207689.91	
41.00	0.46	298.00	2.36	26.83	0.09	14.37	218639.68	
42.00	0.34	298.00	0.94	23.78	0.03	10.69	232553.11	
43.00	0.46	344.11	0.76	26.83	0.03	4.60	242372.11	
44.00	0.46	319.11	0.94	23.17	0.03	5.75	242642.46	
45.00	0.30	298.00	0.94	25.91	0.03	12.94	253423.26	
46.00	0.30	298.00	0.94	25.91	0.03	12.94	253423.26	
46.00	0.37	298.00	1.49	16.77	0.03	14.15	258268.12	
46.00	1.07	388.56	21.07	32.01	1.01	23.57	260303.41	
47.00	1.07	388.56	21.07	32.01	1.01	23.57	260303.41	

Englehard Stack Merge Calculations								
Stack Number	Diameter (m)	Temp (K)	Flow (m3/s)	Stack Ht (m)	Emission Rate (g/s)	Velocity (m/s)	M	Emission Sum (g/s)
48.00	1.07	388.56	21.07	32.01	1.01	23.57	260303.41	
49.00	0.91	402.44	9.44	24.39	0.35	14.37	268426.86	
49.00	0.91	402.44	9.44	24.39	0.35	14.37	268426.86	
49.00	0.91	402.44	9.44	24.39	0.35	14.37	268426.86	
50.00	1.22	477.44	19.71	32.01	1.01	16.88	299216.74	
51.00	1.22	477.44	19.71	32.01	1.01	16.88	299216.74	
52.00	1.22	477.44	19.71	32.01	1.01	16.88	299216.74	
53.00	0.30	298.00	0.94	32.01	0.03	12.94	313052.27	
54.00	0.70	394.11	7.50	37.50	0.20	19.44	550639.77	
55.00	0.76	402.44	7.08	39.63	0.20	15.52	560820.40	
56.00	0.76	402.44	7.08	39.63	0.20	15.52	560820.40	
57.00	0.76	402.44	7.08	39.63	0.20	15.52	560820.40	
58.00	0.76	402.44	7.08	39.63	0.20	15.52	560820.40	
59.00	0.76	402.44	7.08	39.63	0.20	15.52	560820.40	
60.00	0.76	402.44	7.08	39.63	0.20	15.52	560820.40	
61.00	3.35	319.11	29.45	19.21	0.20	3.34	896500.05	
62.00	0.52	298.00	3.52	32.01	0.03	16.68	1166119.70	
63.00	0.76	298.00	9.97	25.91	0.03	21.86	2676149.67	
64.00	0.76	421.89	9.68	30.49	0.03	21.22	4326465.49	

Figure F-2 Regional Map of Hosford Mill and PM10 / NO2 Ambient Air Monitors



Filename: Fig F-2 Monitor Locations.srf
Basemap: statecounty.gsb
Post: PMSigGrids.xls



NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	
B	UDATED FENCE, ROADS AND ENTRANCE	JAD	3/17/04	
C	ADDED PRELIMINARY BARK SYSTEM	JAD	4/2/04	

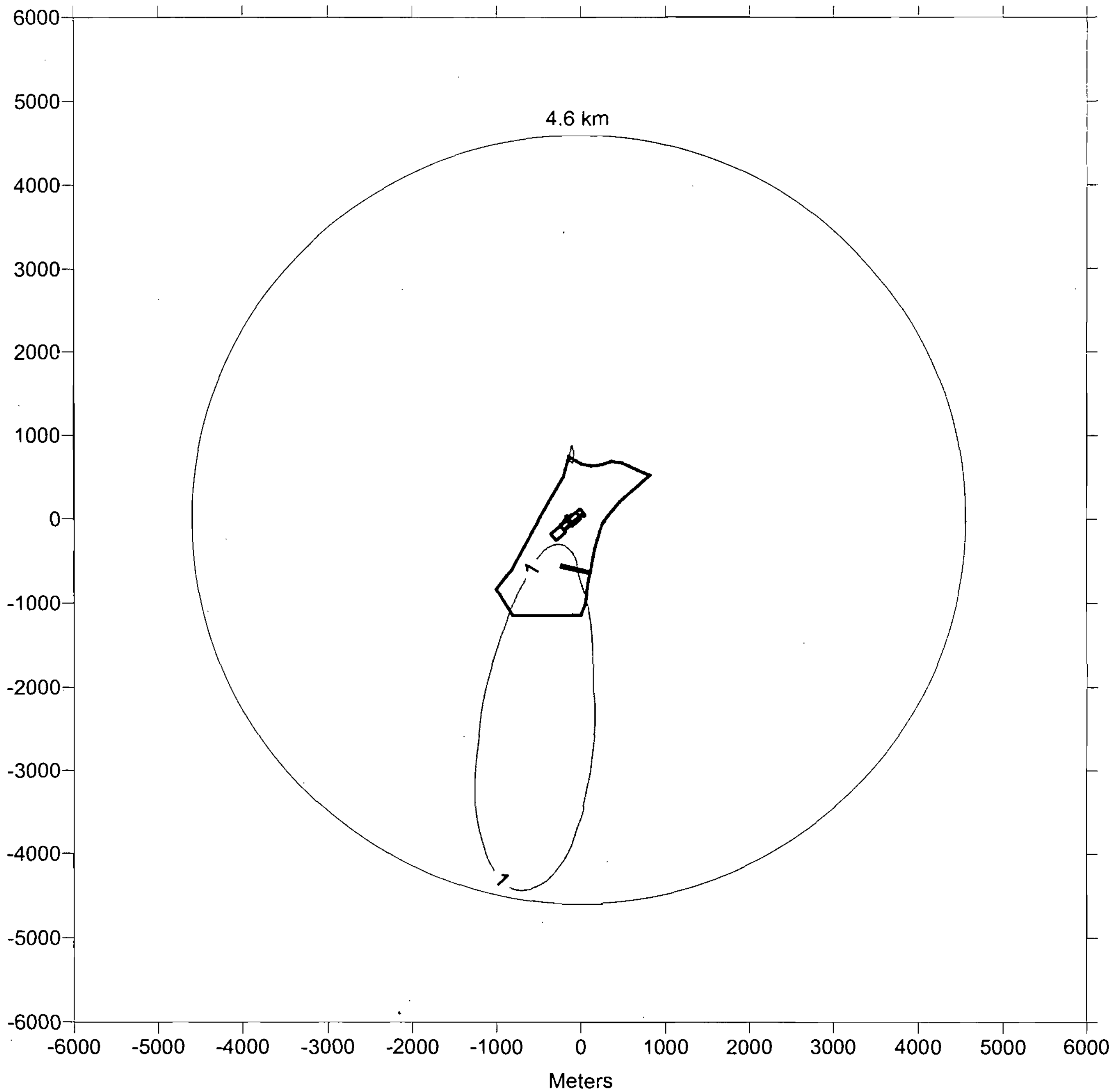
GEORGIA–PACIFIC CORPORATION
BUILDING PRODUCTS ENGINEERING DIVISION
133 Peachtree St. 18th Floor
ATLANTA, GEORGIA 30303
"Safety in Engineering, We Take It Seriously"

PLANT LOCATION: LIBERTY, CO. FL. OSB

Figure F–3 Downwash Structures

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:	342–165–G–001–05	C
LOCATION: 342–165	APPROVED BY:	SHEET: 5 of 5	

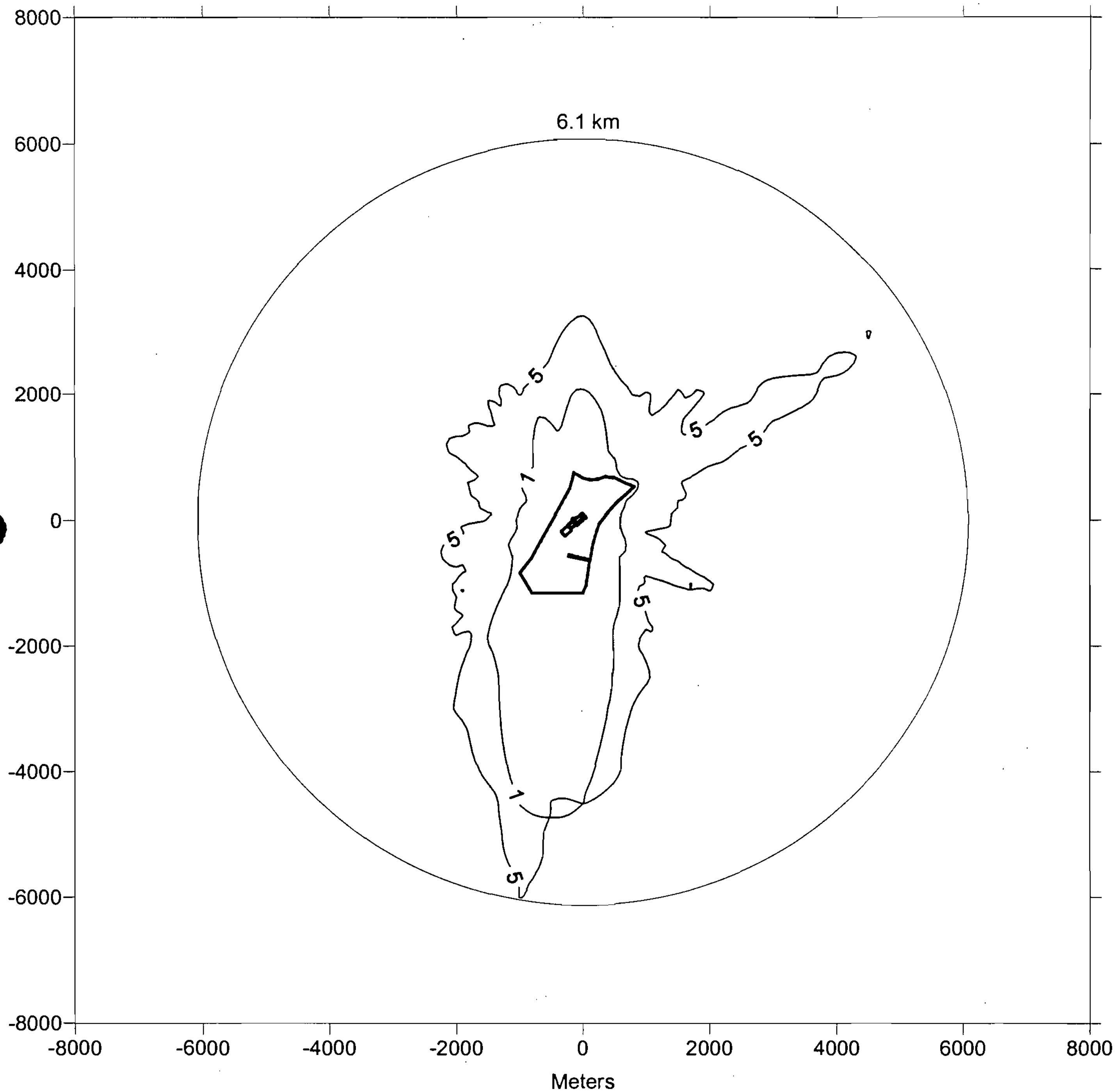
Figure F-8, NO2 Annual Significant Impact Area, GP Hosford



Significant Impact Area of 4.6 km from plant center.
Maximum for 1986, 1987, 1988, 1989 and 1990 meteorlogical data.

ilename: NO2SigArea
Basemap: Graphics.dxf
Circle: NOxSigGrids.xls
Contour: NOxSig.grd

Figure F-9, PM10 Significant Impact Area, GP Hosford

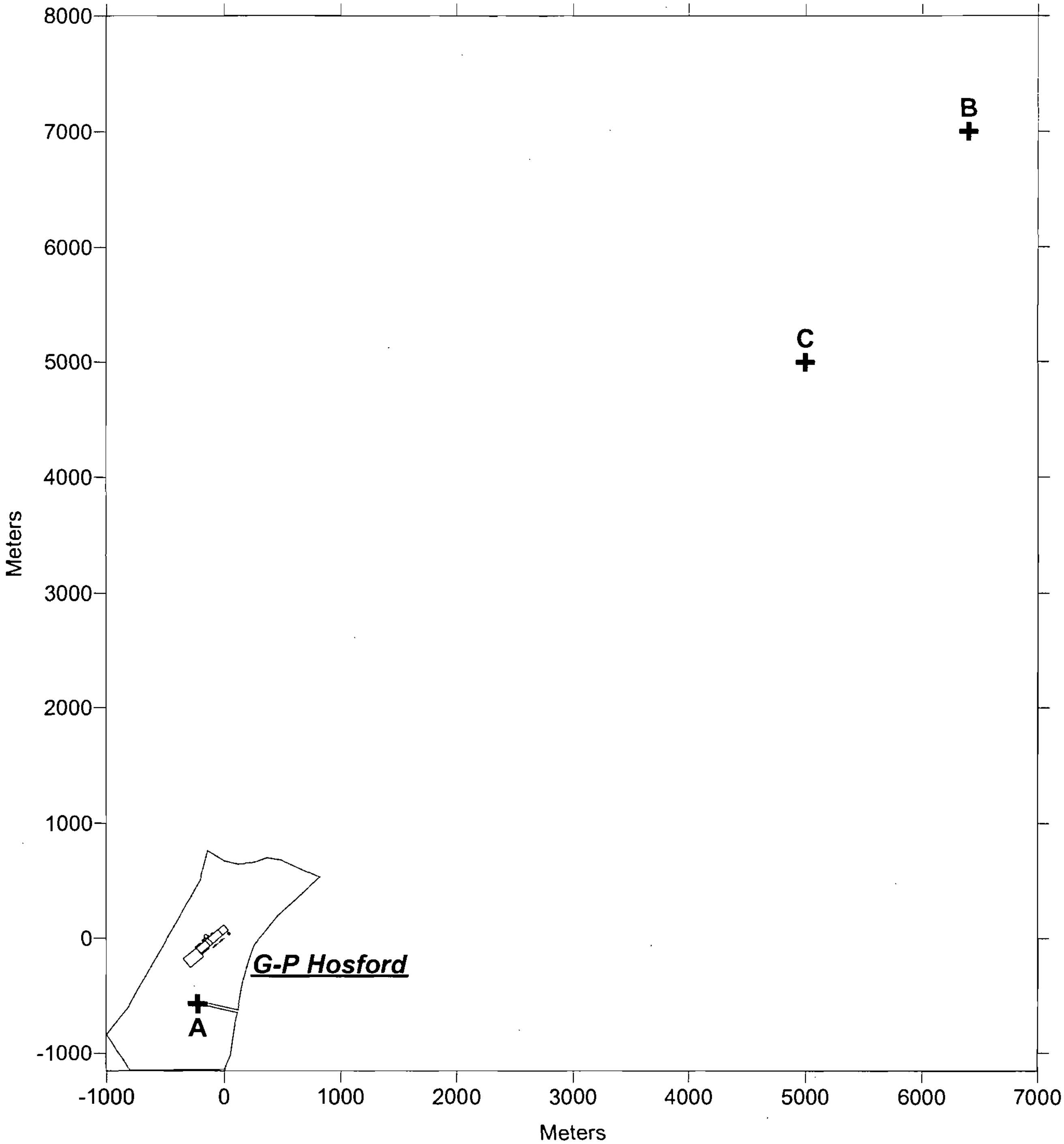


Contour Label 1 - Annual Impact
Contour Label 5 - 24-Hour Impact

Significant Impact Area of 6.1 km from plant center.
Maximum for 1986, 1987, 1988, 1989 and 1990 meteorlogical data.

Filename: PMSigArea.srf
Contour: Annual Sig Impact.grd
Contour: 24-hour Sig Impact.grd
Basemap: Grahics.dxf
Circle: PMSigGrids.xls

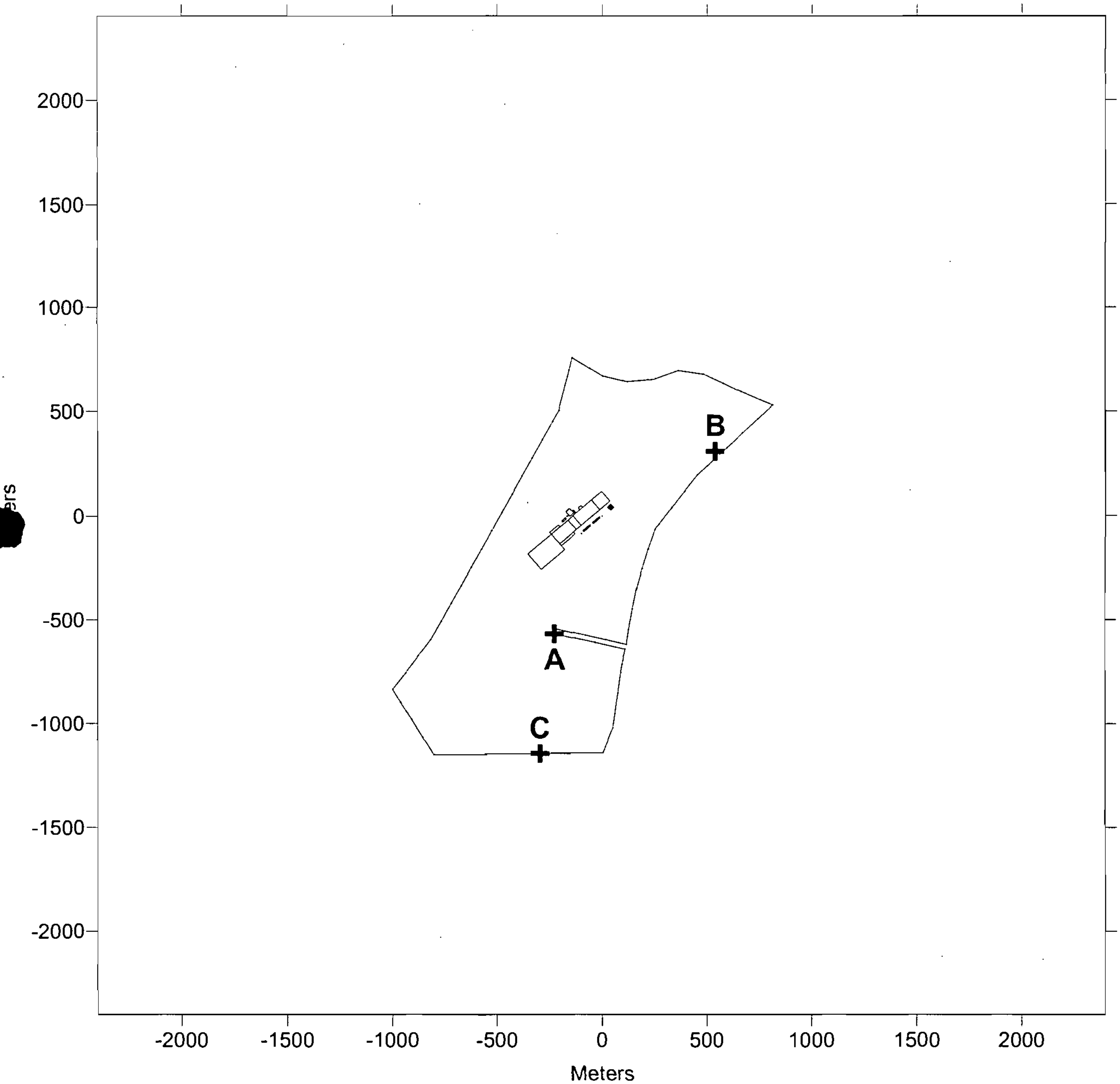
Figure F-10 NAAQS Maximum Impact Locations, G-P Hosford



Filename: NAAQS MAX.srf
Basemap: Graphics.dxf
Post File: NAAQS Grids

Legend:
A. PM: 11.81 ug/m3; Annual (Local Coordinates*: -227.4 E, -567.2 N)
B. PM: 41.23 ug/m3; 24-hr (Local Coordinates*: 6400 E, 7000 N)
C. NO2 15.19 ug/m3; Annual (Local Coordinates*: 5000 E, 5000 N)
* Local coordinates based on RTO stack location of 0,0

Figure F-11 PSD Class II Increment Maximum Impact Locations, G-P Hosford



Legend:
A. PM: 9.5 ug/m3; Annual (Local Coordinates*: -227.4 E, -567.2 N)
B. PM: 27.52 ug/m3; 24-hr (Local Coordinates*: 6000 E, 7000 N)
C. NO2 2.14 ug/m3; Annual (Local Coordinates*: 5000 E, 5000 N)
* Local coordinates based on RTO stack location of 0,0

Filename: Increment MAX.srf
Basemap: Graphics.dxf
Post File: Increment Grids

Computer File Directory

G-P HOSFORD PSD, MAY, 2004
CD DIRECTORY
FOR MORE INFORMATION CONTACT MARK AGUILAR, GP 404 652-4293
MJAGUILA@GAPAC.COM

```
06/30/2004  02:30p    <DIR>    CALPUFF1990
06/30/2004  02:30p    <DIR>    CALPUFF1992
06/30/2004  02:31p    <DIR>    CALPUFF1996
06/30/2004  02:31p    <DIR>    ISC FOR AQRV CONCENTRATIONS
06/30/2004  02:31p    <DIR>    ISC FOR CLASS I SIG ANALYSIS
06/30/2004  02:31p    <DIR>    NPS RECEPTORS
06/30/2004  02:40p    <DIR>    Increment
06/30/2004  02:41p    <DIR>    NAAQS
06/30/2004  02:43p    <DIR>    SIG
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THE FOLLOWING 6 CLASS 1 ANALYSIS FOLDERS ARE PROVIDED:

CALPUFF1990
CALPUFF1992
CALPUFF1996
ISC FOR AQRV CONCENTRATIONS
ISC FOR SIG ANALYSIS
NPS RECEPTORS

THE FOLLOWING 6 SUB-FOLDERS ARE UNDER CALPUFF1990, CALPUFF1992 AND CALPUFF1996:

CALPOST FOR AQRV AND SIG CONCENTRATIONS
CALPOST FOR DEPOSITION
CALPOST FOR REGIONAL HAZE
CALPUFF FOR PMCL1
CALPUFF FOR SIG ANALYSIS
POSTUTIL FOR DEPOSITION

CALPOST FOR AQRV AND SIG CONCENTRATIONS (ST. MARKS NWA ONLY)

PSTCOSM.INP - CONTROL FILE FOR CO
pstcosm.lst - LIST FILE FOR CO
PSTNOXSM.INP - CONTROL FILE FOR NOX
pstnoxsm.lst - LIST FILE FOR NOX
PSTPMSM.INP - CONTROL FILE FOR PM10
pstpmsm.lst - LIST FILE FOR PM10
PSTSO2SM.INP - CONTROL FILE FOR SO2
pstso2sm.lst - LIST FILE FOR SO2

CALPOST FOR DEPOSITION

DEP90.SUM - SUMMARY FILE
PSTNDBB.INP - CONTROL FILE FOR NITROGEN AT BRADWELL BAY NWA
pstndbb.lst - LIST FILE FOR NITROGEN AT BRADWELL BAY NWA
PSTNDSM.INP - CONTROL FILE FOR NITROGEN AT ST. MARKS NWA
pstndsm.lst - LIST FILE FOR NITROGEN AT ST. MARKS NWA
PSTSDBB.INP - CONTROL FILE FOR SULFUR AT BRADWELL BAY NWA
pstsdbb.lst - LIST FILE FOR SULFUR AT BRADWELL BAY NWA
PSTSDSM.INP - CONTROL FILE FOR SULFUR AT ST. MARKS NWA
pstsdsm.lst - LIST FILE FOR SULFUR AT ST. MARKS NWA

CALPOST FOR REGIONAL HAZE

PSTHZSM.INP - CONTROL FILE FOR VISIBILITY
psthzsm.lst - LIST FILE FOR VISIBILITY

CALPUFF FOR PMCL1

CALSUM.INP - CALSUM CONTROL FILE TO ADD BASELINE AND FUTURE IMPACTS
calsum.lst - CALSUM LIST FILE
PUFPMC1B.INP - CONTROL FILE FOR PM10 CLASS I INCREMENT - PSD BASELINE SOURCES
pufpmc1b.lst - LIST FILE
PUFPMC1F.INP - CONTROL FILE FOR PM10 CLASS I INCREMENT - PSD FUTURE SOURCES
pufpmc1f.lst - LIST FILE

CALPUFF FOR SIG ANALYSIS

PUFF.INP - CONTROL FILE
puff.lst - LIST FILE

POSTUTIL FOR DEPOSITION

PUTDEP.INP - CONTROL FILE
putdep.lst - LIST FILE
RUNUTIL.BAT - BATCH FILE

ISC FOR AQRV CONCENTRATIONS (BRADWELL BAY NWA ONLY)

COAQRV.ZIP - INPUT/OUTPUT FOR 1986-1990 AND SUMMARY FILE FOR CO
NOXAQRV.ZIP - INPUT/OUTPUT FOR 1986-1990 AND SUMMARY FILE FOR NOX
PMAQRV.ZIP - INPUT/OUTPUT FOR 1986-1990 AND SUMMARY FILE FOR PM10
SO2AQRV.ZIP - INPUT/OUTPUT FOR 1986-1990 AND SUMMARY FILE FOR SO2

ISC FOR SIG ANALYSIS (BRADWELL BAY NWA ONLY)

NOXC1SIG.zip - INPUT/OUTPUT FOR 1986-1990 AND SUMMARY FILE FOR NOX
PMCL1SIG.zip - INPUT/OUTPUT FOR 1986-1990 AND SUMMARY FILE FOR PM10

NPS RECEPTORS - FROM NPS EXTRACTION PROGRAM

brba_UTM_16-recep.dat
stmawild_UTM_16-recep.dat

Directory of \CD\Increment

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06/30/2004	02:37p	<DIR>	PM

Directory of \CD\Increment\NO2

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04/15/2004	05:39p	831,059	NO286INC.LST
04/15/2004	05:40p	74,006	no287inc.inp
04/15/2004	05:41p	831,059	NO287INC.LST
04/15/2004	05:41p	74,006	no288inc.inp
04/15/2004	05:42p	831,059	NO288INC.LST
04/15/2004	05:42p	74,006	no289inc.inp
04/15/2004	05:43p	831,059	NO289INC.LST
04/15/2004	05:44p	74,006	no290inc.inp
04/15/2004	05:44p	831,059	NO290INC.LST

Directory of CD\Increment\PM

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04/19/2004	10:35a	101,982	PMinc87.DAT
04/19/2004	11:45a	1,408,751	PMINC87.LST
04/19/2004	10:37a	101,981	PMinc88.DAT
04/19/2004	11:52a	1,408,751	PMINC88.LST
04/19/2004	11:22a	101,974	PMinc89.DAT
04/19/2004	12:00p	1,408,751	PMINC89.LST
04/19/2004	11:22a	101,974	PMinc90.DAT
04/19/2004	12:08p	1,408,751	PMINC90.LST

Directory of \CD\NAAQS

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06/30/2004	02:42p	<DIR>	Refined PM

Directory of \CD\NAAQS\NOX

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04/15/2004	02:16p	79,437	no287aqs.inp
04/15/2004	02:19p	861,848	NO287AQS.LST
04/15/2004	02:19p	79,437	no288aqs.inp
04/15/2004	02:22p	861,848	NO288AQS.LST

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04/15/2004  02:22p          79,437 no289aqs.inp
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04/19/2004  10:56a         104,703 PMaaqs87.DAT
04/19/2004  03:04p       1,422,280 PMAAQS87.LST
04/19/2004  01:08p         104,695 PMaaqs88.DAT
04/19/2004  03:19p       1,422,280 PMAAQS88.LST
04/19/2004  11:01a         104,702 PMaaqs89.DAT
04/19/2004  03:54p       1,422,280 PMAAQS89.LST
04/19/2004  11:03a         104,703 PMaaqs90.DAT
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 Directory of \CD\SIG

06/30/2004  02:44p    <DIR>          CO
06/30/2004  02:44p    <DIR>          NOx
06/30/2004  02:43p    <DIR>          PM

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04/26/2004  08:55a       1,544,691 CO87.LST
04/26/2004  08:50a          82,005 CO88.inp
04/26/2004  08:55a       1,544,691 CO88.LST
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04/26/2004  08:56a       1,544,691 CO89.LST
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04/26/2004  08:52a         933,903 NO287.LST
04/26/2004  08:44a          82,052 no288.inp
04/26/2004  08:52a         933,903 NO288.LST
04/26/2004  08:45a          82,052 no289.inp
04/26/2004  08:53a         933,903 NO289.LST
04/26/2004  08:45a          82,052 no290.inp
04/26/2004  08:53a         933,903 NO290.LST

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04/19/2004  08:06a       1,412,452 PMSIG24HRTO.LST
04/19/2004  07:28a         107,392 PMsig86TO.DAT
04/19/2004  08:13a       1,512,555 PMSIG86TO.LST
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04/19/2004 07:20a	107,392	PMsig87TO.DAT
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04/19/2004 08:28a	1,512,555	PMSIG88TO.LST
04/19/2004 07:26a	107,392	PMsig89TO.DAT
04/19/2004 08:35a	1,512,555	PMSIG89TO.LST
04/19/2004 07:27a	107,392	PMsig90TO.DAT
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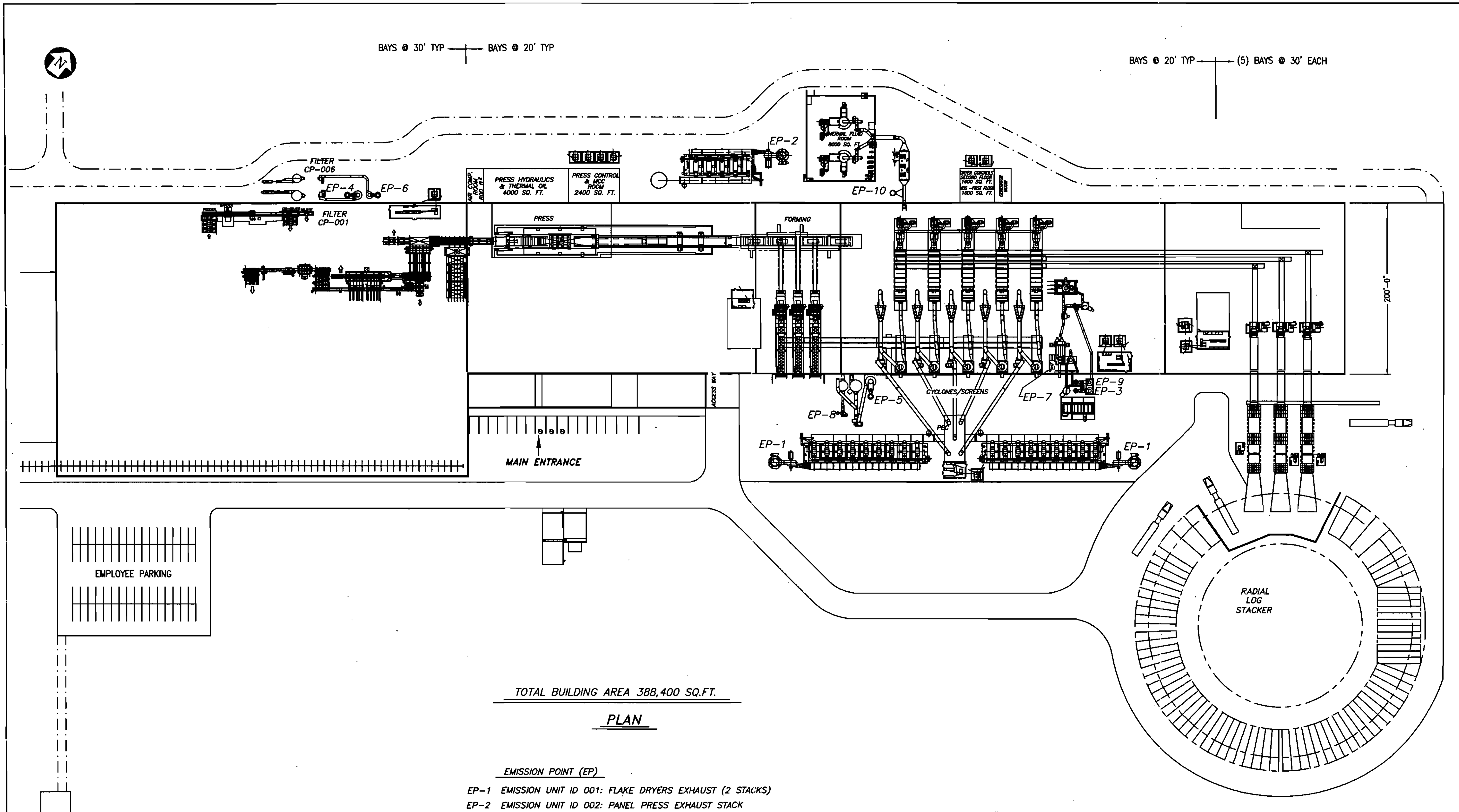

TOTAL BUILDING AREA 388,400 SQ.FT.

PLAN

EMISSION POINT (EP)

EP-1 EMISSION UNIT ID 001: FLAKE DRYERS EXHAUST (2 STACKS)
EP-2 EMISSION UNIT ID 002: PANEL PRESS EXHAUST STACK
EP-3 EMISSION UNIT ID 003: SCREEN FINES W/SAW TRIM TRANSFER BAG FILTER EXHAUST
EP-4 EMISSION UNIT ID 004: SAW TRIM/FINISHING LINE BAG FILTER EXHAUST
EP-5 EMISSION UNIT ID 005: MAT REJECT/FLYING SAW BAG FILTER EXHAUST
EP-6 EMISSION UNIT ID 006: SPECIALTY SAW/SANDER BAG FILTER EXHAUST
EP-7 EMISSION UNIT ID 007: FUEL SYSTEM PNEUMATICS BAG FILTER EXHAUST
EP-8 EMISSION UNIT ID 008: FORMING BINS BAG FILTER EXHAUST
EP-9 EMISSION UNIT ID 009: HAMMER MILL SYSTEM BAG FILTER EXHAUST
EP-10 EMISSION UNIT ID 010: HOT OIL HEATER ESP EXHAUST STACK

NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	12/14/19	
B	REVISED BUILDING AREA WAS 359,200	RPS	1/4/00	
C	GENERAL REVISIONS	JAD	5/5/04	

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BUILDING PRODUCTS ENGINEERING DIVISION
133 Peachtree St. 18th Floor
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PLANT LOCATION: Hosford, Fl OSB

SITE PLAN LAYOUT
AIR EMISSION POINTS

SCALE: GRAPHIC	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE:	CHECKED BY:	Figure 3-3	C
LOCATION: 342-165	APPROVED BY:		

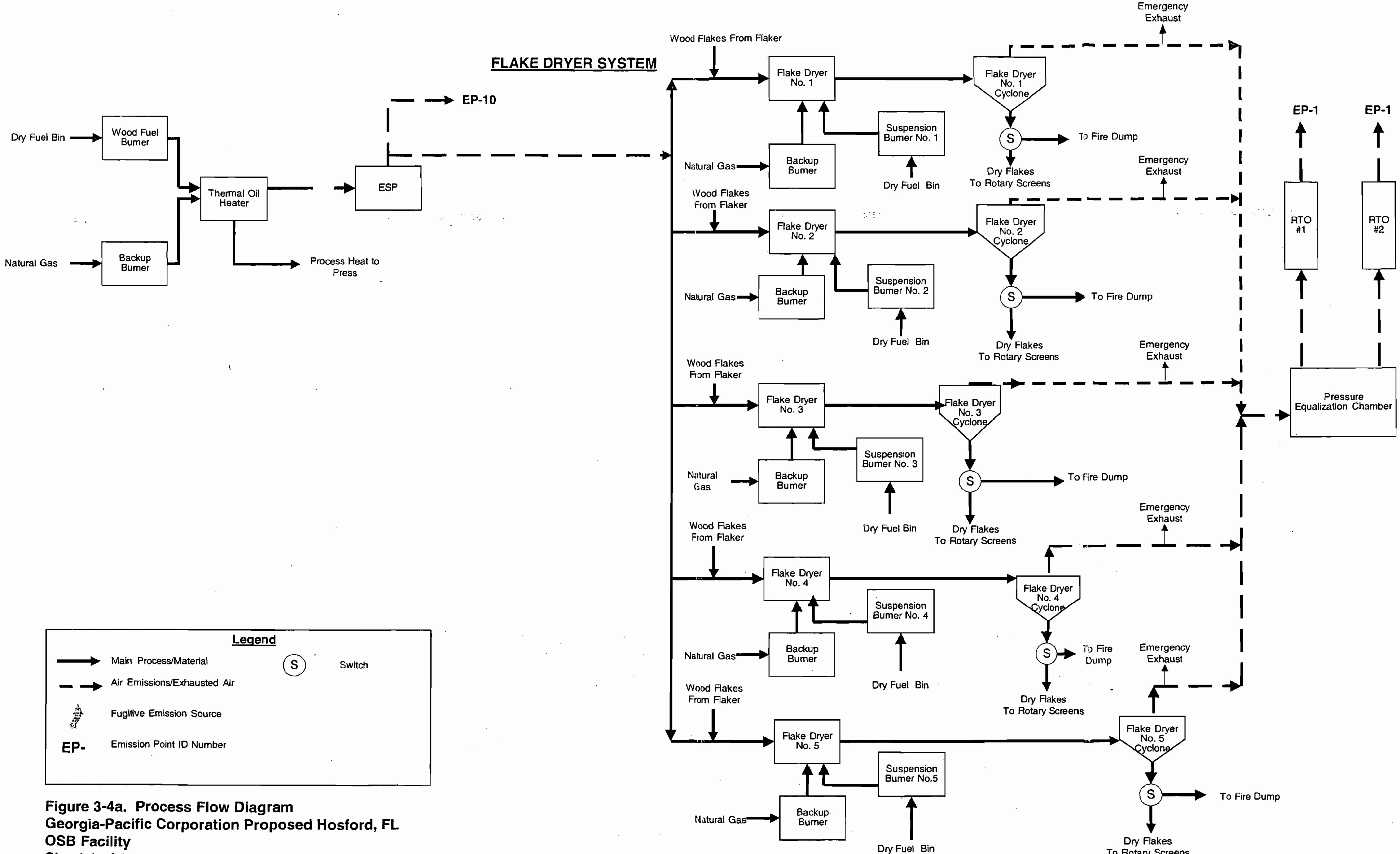


Figure 3-4a. Process Flow Diagram
Georgia-Pacific Corporation Proposed Hosford, FL
OSB Facility
Sheet 1 of 1

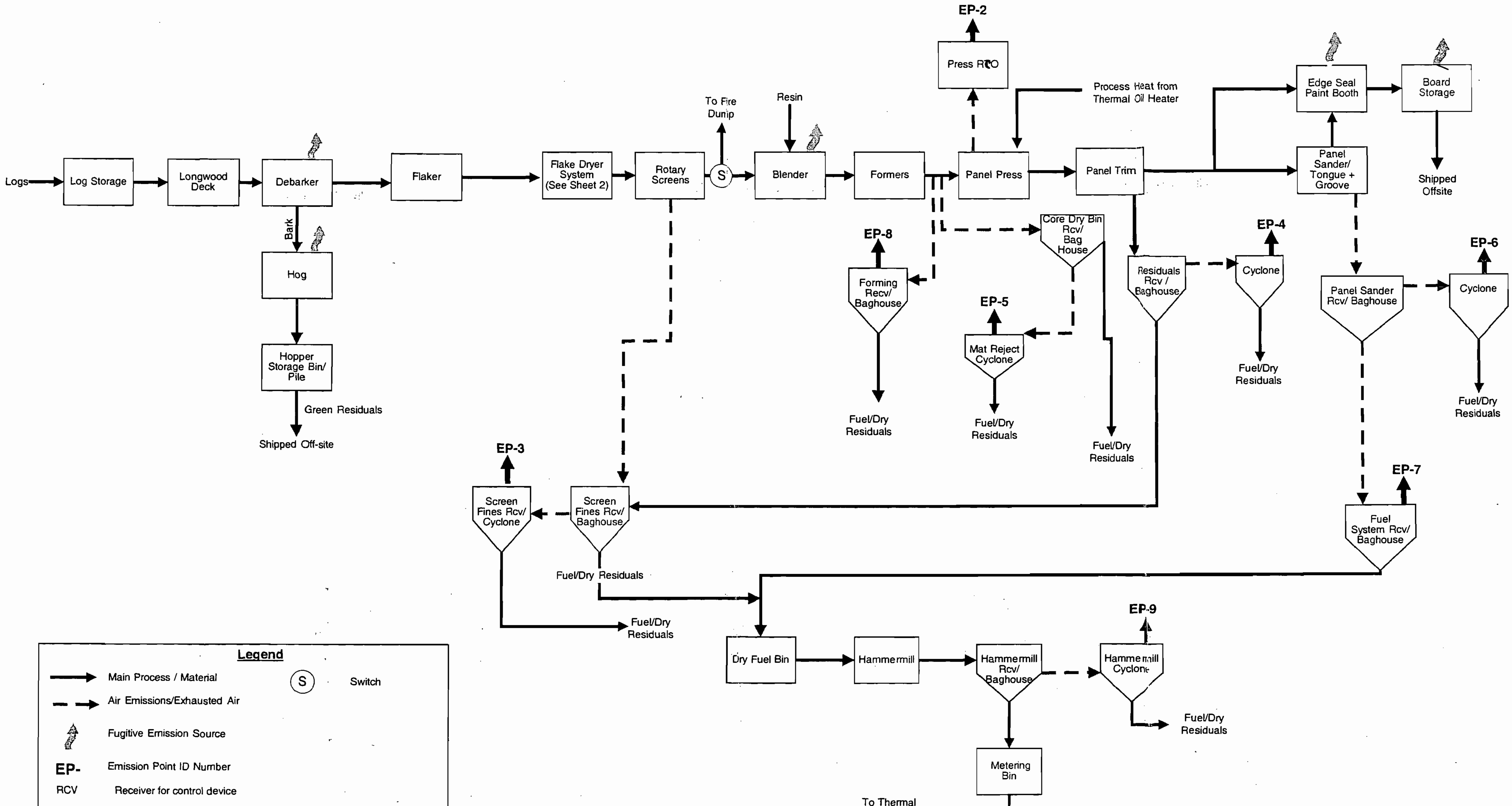
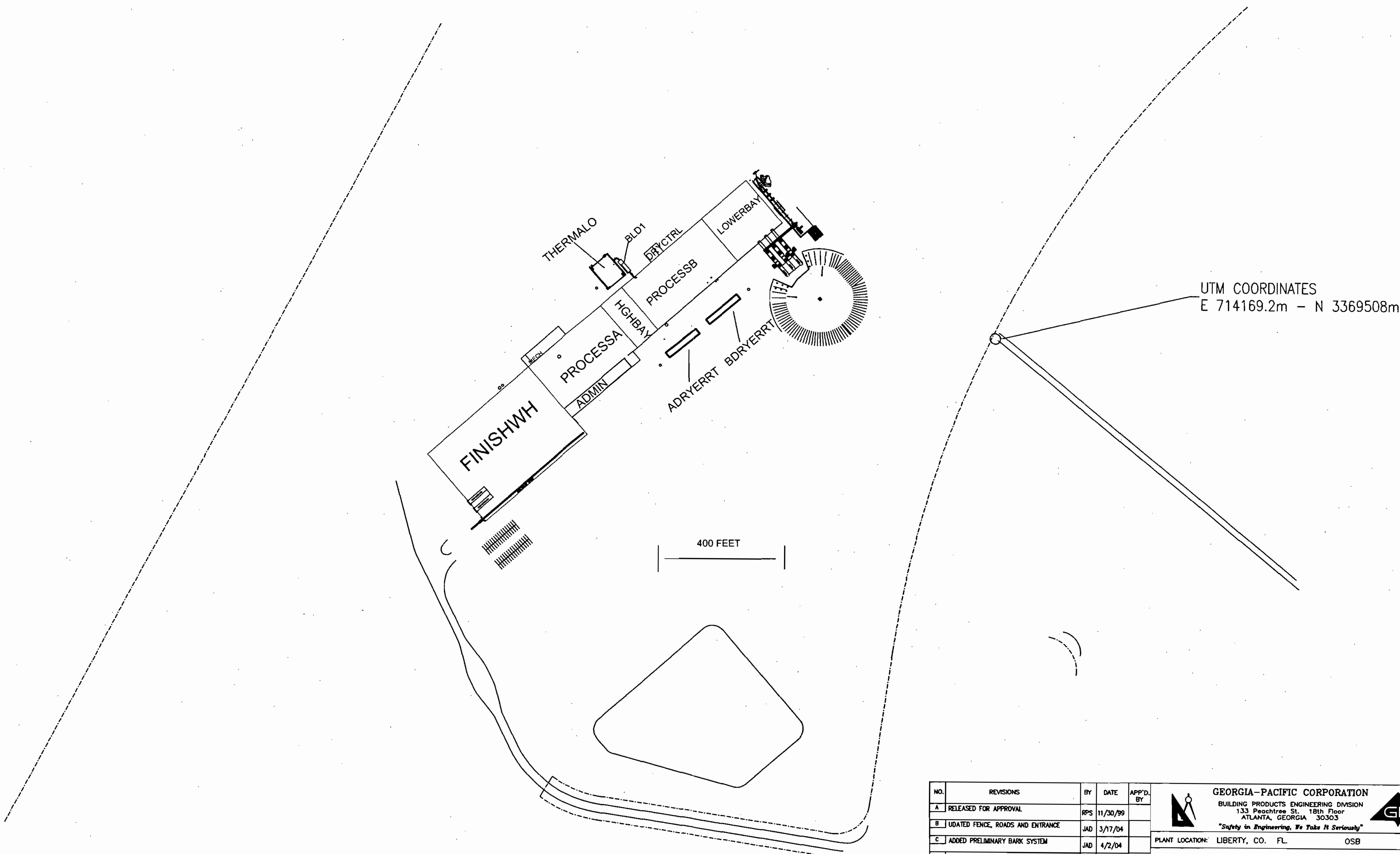


Figure 3-4b. Process Flow Diagram
Georgia-Pacific Corporation Proposed Hosford, FL OSB Facility
Sheet 1 of 1



NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	
B	UDATED FENCE, ROADS AND ENTRANCE	JAD	3/17/04	
C	ADDED PRELIMINARY BARK SYSTEM	JAD	4/2/04	

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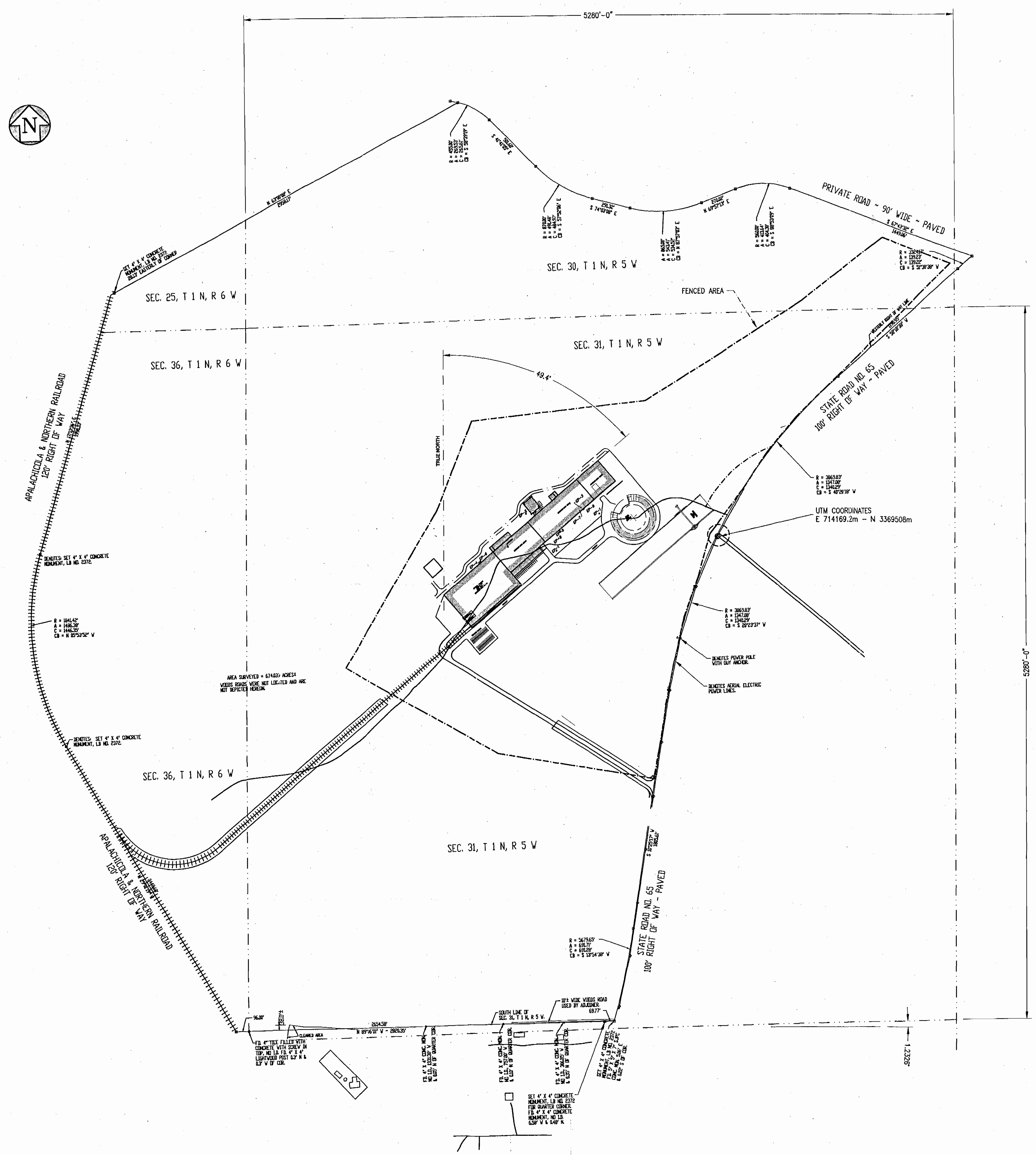
Figure F–3 Downwash Structures

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:	342–165–G–001–05	C
LOCATION: 342–165	APPROVED BY:	SHEET: 5 of 5	

0770010-002 (1)



EMISSION POINT (EP)

EP-1 EMISSION UNIT ID 001: FLAKE DRYERS EXHAUST (2 STACKS)
EP-2 EMISSION UNIT ID 002: PANEL PRESS EXHAUST STACK
EP-3 EMISSION UNIT ID 003: SCREEN FINES W/SAW TRIM TRANSFER BAG FILTER EXHAUST
EP-4 EMISSION UNIT ID 004: SAW TRIM/FINISHING LINE BAG FILTER EXHAUST
EP-5 EMISSION UNIT ID 005: MAT REJECT/FLYING SAW BAG FILTER EXHAUST
EP-6 EMISSION UNIT ID 006: SPECIALTY SAW/SANDER BAG FILTER EXHAUST
EP-7 EMISSION UNIT ID 007: FUEL SYSTEM PNEUMATICS BAG FILTER EXHAUST
EP-8 EMISSION UNIT ID 008: FORMING BINS BAG FILTER EXHAUST
EP-9 EMISSION UNIT ID 009: HAMMER MILL SYSTEM BAG FILTER EXHAUST
EP-10 EMISSION UNIT ID 010: HOT OIL HEATER ESP EXHAUST STACK

NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	

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SITE PLAN LAYOUT
AIR EMISSION POINTS

Fig 3-2

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:	342-165-G-001-05 SHEET: 5 of 5	A
LOCATION: 342-165	APPROVED BY:		

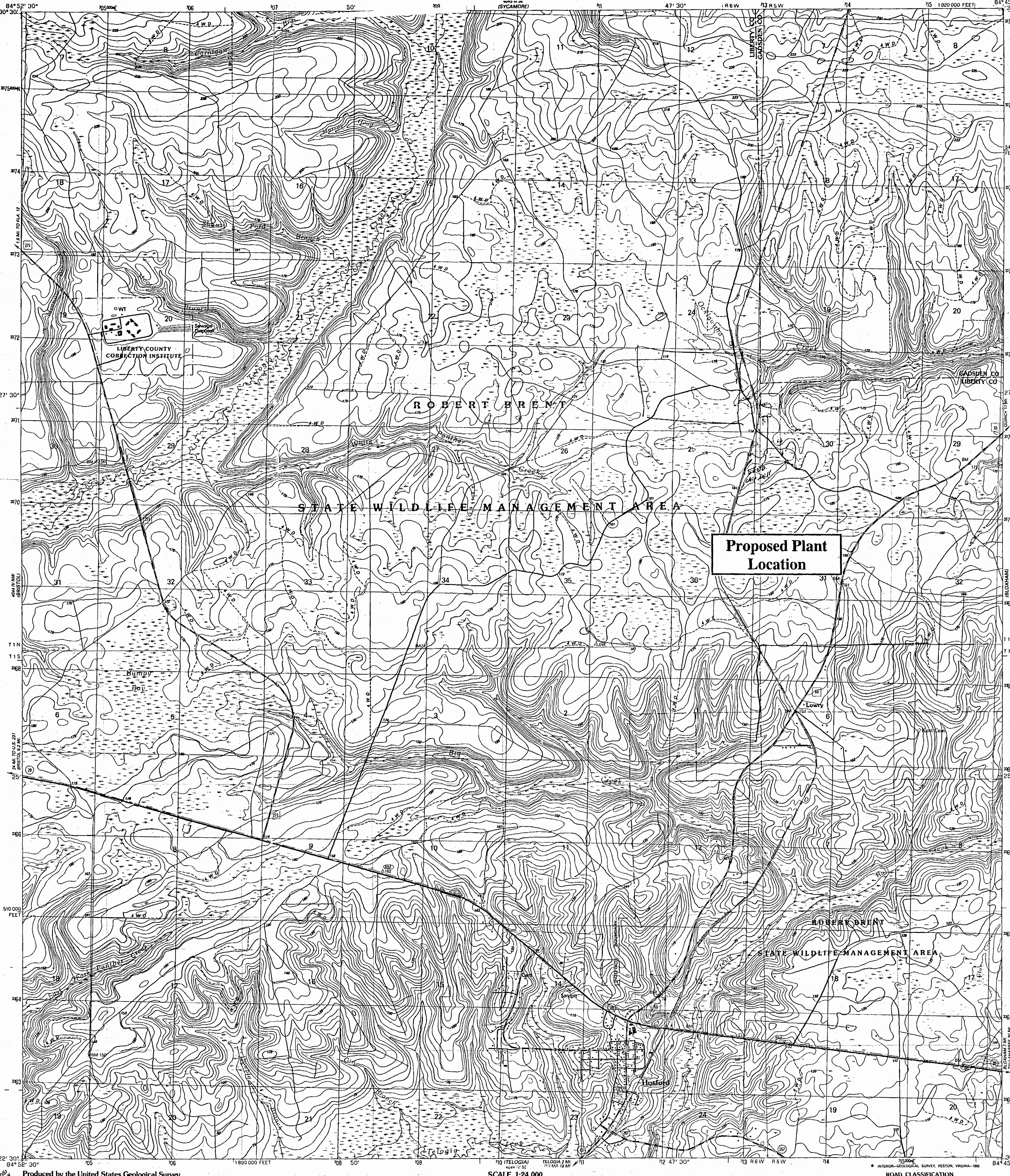
G:\342\165 Hosford, Fl OSB\342-165-G-001-05.dwg Mon Jan 03 14:36:07 2000 PLOTTED BY RPS

0770010-002 (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Figure F-1. USGS Topographic Map G-P OSB Plant, Hosford, FL

HOSFORD QUADRANGLE
FLORIDA
7.5 MINUTE SERIES (TOPOGRAPHIC)



Produced by the United States Geological Survey
in cooperation with State of Florida agencies
Control by USGS and NOS/NOAA
Topography by photogrammetric methods from aerial photographs taken 1975. Revised from aerial photographs taken 1983
Field checked 1989. Map edited 1990
Supersedes map dated 1945
Projection and 10,000-foot grid ticks: Florida coordinate system, north zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 16
1927 North American Datum
To place on the predicted North American Datum 1983, move the projection lines 18 meters south and 8 meters west as shown by dashed corner ticks
There may be private inholdings within the boundaries of the National or State reservations shown on this map
Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked
Dotted land lines established by private subdivision of the Forbes Purchase

UTM GRID AND 1990 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

FLORIDA
QUADRANGLE LOCATION

FOR GEORGIA PACIFIC TO KEEP

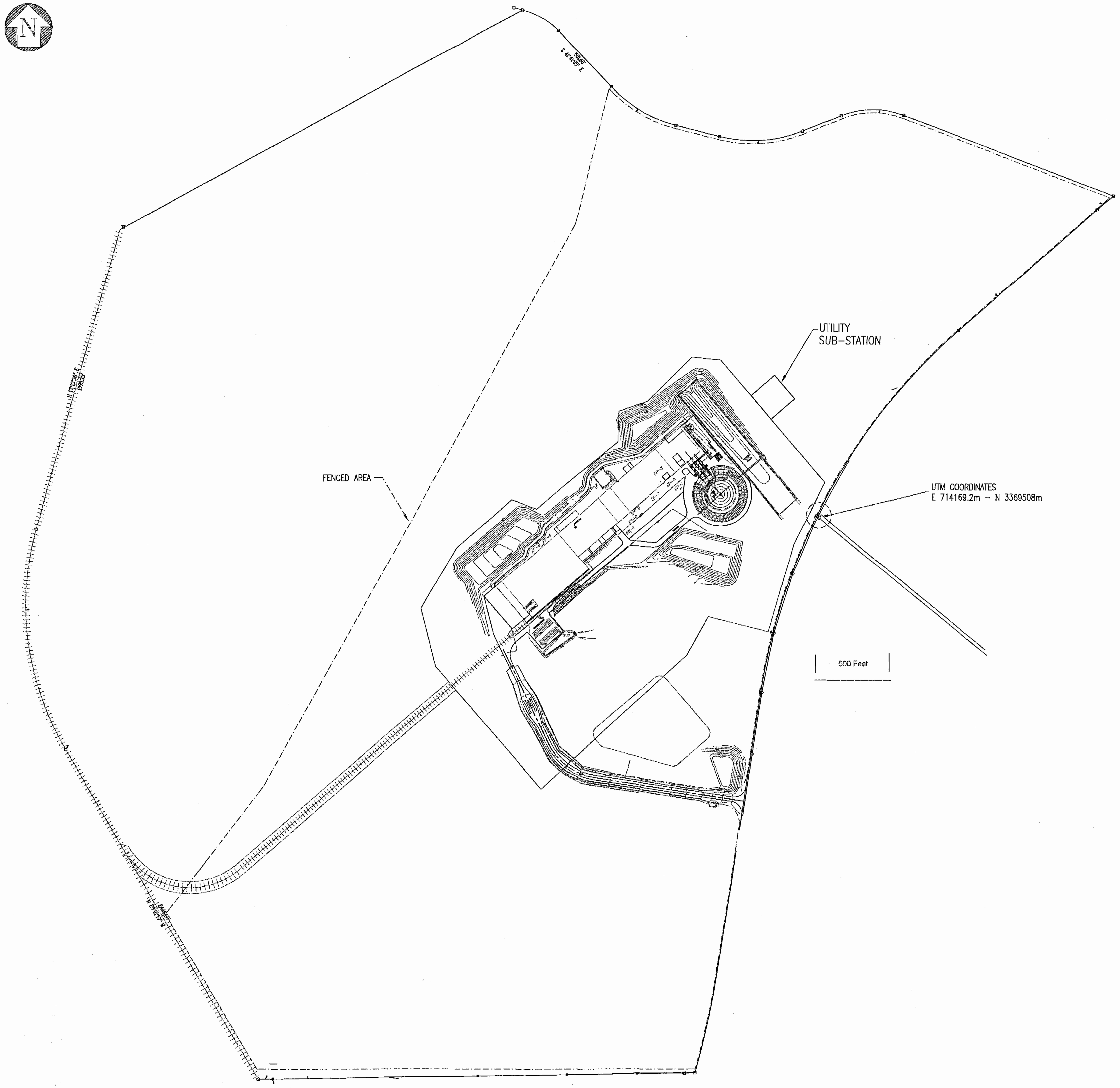
ROAD CLASSIFICATION

Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route
County Route

HOSFORD, FLA.
30084-D7-TF-024
1990
DMA 4044 IV NE-SERIES V847

0770010-002

(3)



EMISSION POINT (EP)

EP–1 EMISSION UNIT ID 001: FLAKE DRYERS EXHAUST (2 STACKS)
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EP–8 EMISSION UNIT ID 008: FORMING BINS BAG FILTER EXHAUST
EP–9 EMISSION UNIT ID 009: HAMMER MILL SYSTEM BAG FILTER EXHAUST
EP–10 EMISSION UNIT ID 010: HOT OIL HEATER ESP EXHAUST STACK

NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	
B	UDATED FENCE, ROADS AND ENTRANCE	JAD	3/17/04	
C	ADDED PRELIMINARY BARK SYSTEM	JAD	4/2/04	

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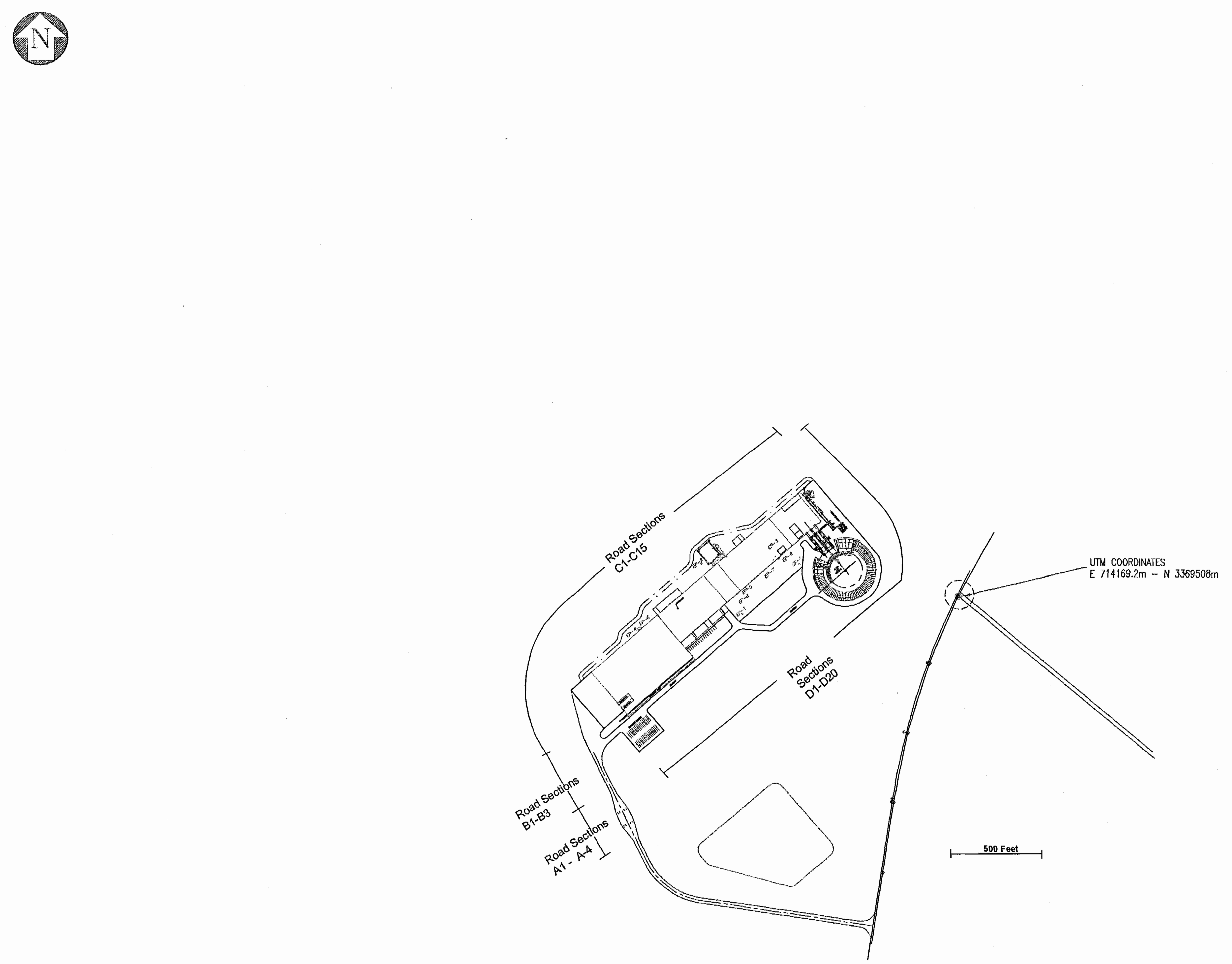
PLANT LOCATION:

Figure 4 Current Conditions

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:		
LOCATION: 342–165	APPROVED BY:	SHEET: 5 of 5	

OT10010-002 (4)



NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	
B	UDATED FENCE, ROADS AND ENTRANCE	JAD	3/17/04	
C	ADDED PRELIMINARY BARK SYSTEM	JAD	4/2/04	

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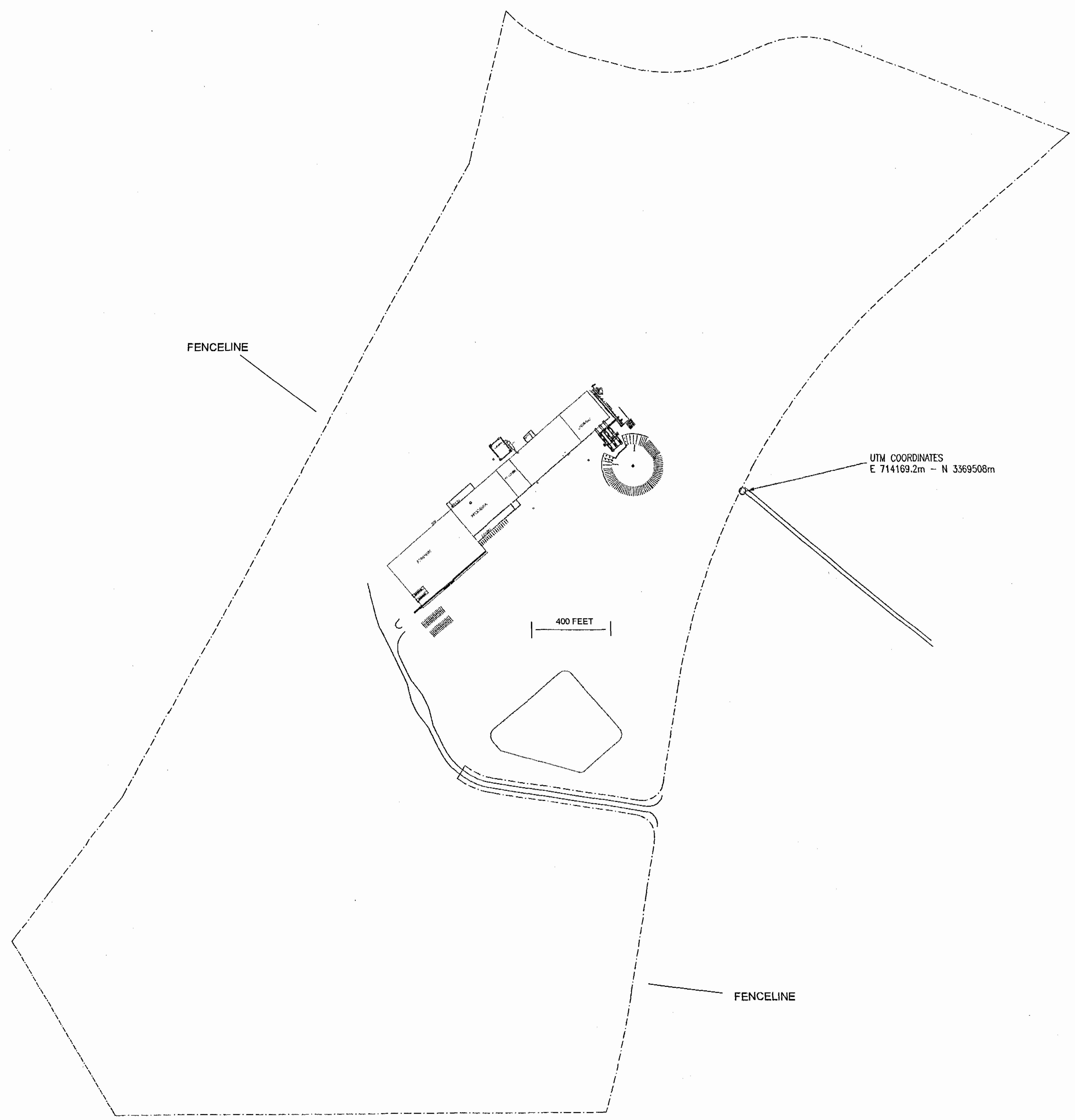
PLANT LOCATION: LIBERTY, CO. FL. OSB

Figure F–5

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:	342–165–G–001–05	C
LOCATION: 342–165	APPROVED BY:	SHEET: 5 of 5	

0770010

5



NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	
B	UDATED FENCE, ROADS AND ENTRANCE	JAD	3/17/04	
C	ADDED PRELIMINARY BARK SYSTEM	JAD	4/2/04	

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PLANT LOCATION: LIBERTY, CO. FL. OSB

Figure F–6 Fenceline

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:	342–165–G–001–05	C
LOCATION: 342–165	APPROVED BY:	SHEET: 5 of 5	

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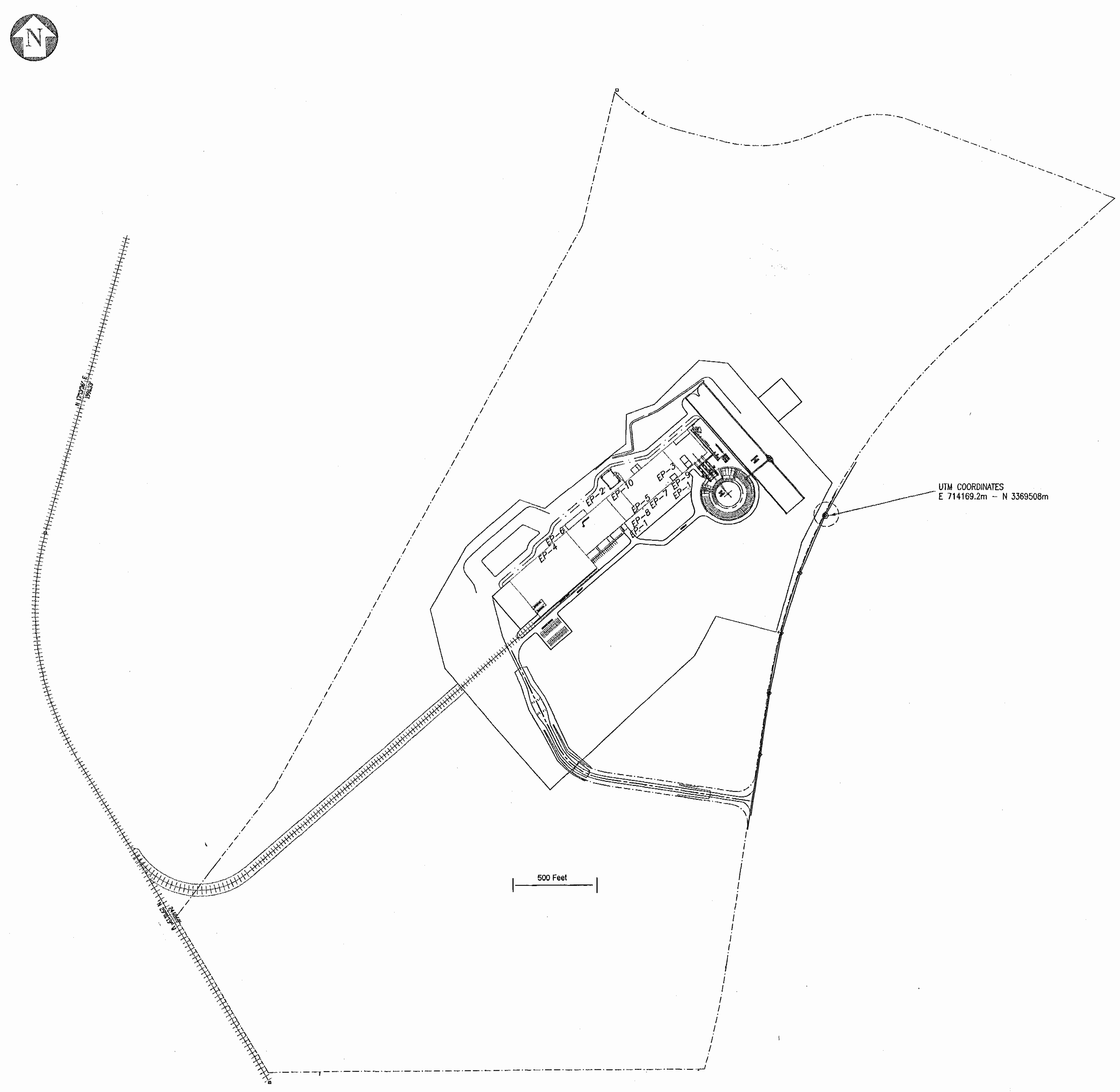
(6)



EMISSION POINT (EP)

EP–1 EMISSION UNIT ID 001: FLAKE DRYERS EXHAUST (2 STACKS)
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NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	11/30/99	
B	UDATED FENCE, ROADS AND ENTRANCE	JAD	3/17/04	
C	ADDED PRELIMINARY BARK SYSTEM	JAD	4/2/04	

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ATLANTA, GEORGIA 30303
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Figure F–7 Emission Sources

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 11/30/99	CHECKED BY:	342–165–G–001–05	C
LOCATION: 342–165	APPROVED BY:	SHEET: 5 of 5	