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November 8, 2004

RECEIVED
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AIR PROTECTION BRANCH

Mr. John Yntema
Combustion Unit Permitting Manager
Georgia Environmental Protection Division
4244 International Parkway, Suite 120
Atlanta, GA 30354

RE: Norbord Georgia, Inc. – Cordele OSB Mill (Crisp County)
Prevention of Significant Deterioration Permit Application

Dear Mr. Yntema:

Please find enclosed five (5) copies of a Prevention of Significant Deterioration (PSD) permit application prepared by Trinity Consultants (Trinity) on behalf of Norbord Georgia, Inc. (Norbord) for the Cordele OSB Mill located in Crisp County, Georgia. Norbord's proposed expansion of the Cordele OSB Mill constitutes a major modification to an existing major source, and is therefore subject to PSD permitting requirements as administered by the Georgia Environmental Protection Division. The enclosed permit application provides a description of the facility and project, emissions analysis, permitting and regulatory analysis, best available control technology determination, air quality analysis, and Georgia permit application forms. Because the facility is an existing major source under the Title V operating permit program, an updated Title V application database is also included with this application.

As you review the application materials, please do not hesitate to contact me at (404) 256-1919 or Phil Towles of Norbord at (864) 697-5438 to discuss any questions or comments about the information presented in this permit application or if additional information is required. Norbord and Trinity appreciate Georgia EPD's and your commitment to promptly reviewing the permit application for the Cordele OSB Mill expansion project.

Sincerely,

TRINITY CONSULTANTS

RAGesser

Ryan A. Gesser
Managing Consultant

Enclosures

cc: Mr. Phil Towles, Norbord (Kinards, South Carolina)

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PREVENTION OF SIGNIFICANT DETERIORATION PERMIT APPLICATION
NORBORD GEORGIA, INC.
CORDELE, GEORGIA

Prepared by:

NORBORD GEORGIA, INC.
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November 2004

Project 041101.0101

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1. EXECUTIVE SUMMARY

Norbord Georgia, Inc. (Norbord) operates an oriented strandboard (OSB) facility located near Cordele, Georgia, in Crisp County. Norbord is proposing an expansion project in which the OSB production capacity would be significantly increased by construction of a new production line. Because of the magnitude of proposed air emissions, the project is subject to New Source Review for air quality impacts, specifically a Best Available Control Technology (BACT) and air quality analyses as required under the Prevention of Significant Deterioration (PSD) permitting program as administered by the Georgia Environmental Protection Division (EPD) and Georgia's *Rules for Air Quality Control* (GRAQC) (Revised, July 2004).

This PSD permit application contains the technical analyses and administrative documentation to meet the PSD permitting procedural requirements and provide Georgia EPD the information to evaluate Norbord's proposed expansion project and authorize construction of the expansion project. Following this executive summary, a description of the facility and project, emissions inventory, regulatory review, BACT determination, and air quality analyses are presented. The appendices to and enclosures with this narrative report include permit application forms and supporting documentation to the permit application.

1.1 FACILITY AND PROJECT DESCRIPTIONS

Norbord operates an oriented strandboard (OSB) facility located near Cordele, Georgia along Highway 280 West in Crisp County. Mixed southern hardwoods and pine are received by truck, debarked, flaked, and conveyed to dryer metering bins. Upon rotary dryer passage, the dry flakes are collected, and conveyed to blender metering bins. The flakes are then mixed with wax and resin and formed into a continuous mat. The mat is cut into sections and pressed at high temperature and pressure. Finally, the boards are sanded, trimmed to size, edge coated, and packaged for shipment. An area map, process flow diagram, facility layout, and Title V operating permit depicting the current facility operations are provided in Appendix B.

This application seeks agency approval to install three rotary dryers,[1] a wood-fired energy system (natural gas backup), an additional press, and six baghouses associated with handling, blending, forming and finishing processes. The aforementioned new sources will have a production capacity of 650 million square feet per year (MMsf/yr) on a 3/8" basis.[2] A process flow diagram and facility layout depicting future facility operations are provided in Appendix B. Additional project details are provided in Section 2.

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[1] Two dryers will be constructed initially, but a third dryer may potentially be included in the proposed construction. Dryers may also have natural gas backup burners for situations in which energy system is partially or totally inoperative.

[2] All OSB production figures presented in this application assume a 3/8" basis.

1.2 FACILITY EMISSIONS

Facility wide potential emissions of oxides of nitrogen (NO_X), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2), volatile organic compounds (VOC), and hazardous air pollutants (HAP) are summarized in Tables 1-1 and 1-2. Potential emissions were estimated assuming 8,760 hours of operation and appropriate emission factors. Emission reference materials are provided in Appendix C. Additional details regarding project emissions are provided in Section 3.

TABLE 1-1. CRITERIA POLLUTANT EMISSIONS SUMMARY

	Stack ID	Source ID	APC ID	PM (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
				Future Potential Emissions				
Current Sources	S001	WESP (Dryers)	WP01	310	131	569	1,402	1.96
Current Sources	S003	System #1	BH03	0.18	--	--	78.8	--
Current Sources	S004	System #2	BH04	0.44	--	--	26.3	--
Current Sources	S010	High Pressure Waste System Baghouse	BH10	4.99	--	--	8.15	--
Current Sources	S011	T&G Sander System Baghouse	BH11	1.88	--	--	0.07	--
Current Sources	S012	T&G Saw Line System Baghouse	BH12	0.79	--	--	--	--
Current Sources	S013	Globe Line Saw System Baghouse	BH13	2.32	--	--	--	--
Current Sources	S043	Dry Fuel Storage Silo Baghouse	BH43[1]	--	--	--	--	--
Current Sources	S063	RTO (Press)	RT63	29.0	70.0	44.0	10.0	7.40
Proposed Sources	S201	Dryer Exhaust ([W]ESP/TO)	C201[2]	153	343	343	262	2.63
Proposed Sources	S202	Press Exhaust (TO)	C202	17.4	89.4	107	50.1	12.0
Proposed Sources	S203	Resinated Fines Baghouse	C203	4.38	--	--	52.0	--
Proposed Sources	S204	Unresinated Fines Baghouse	C204	4.38	--	--	39.0	--
Proposed Sources	S205	Finishing Line Baghouse	C205	4.38	--	--	4.88	--
Proposed Sources	S206	Wet Strand Fines Baghouse	C206	4.38	--	--	39.0	--
Proposed Sources	S207	Dry Fuel Bin Baghouse	C207	7.01	--	--	19.5	--
Proposed Sources	S208	Blowline Baghouse	C208	2.19	--	--	--	--
	Facility Wide Total			547	634	1,064	1,991	24.0

1. The current Dry Fuel Storage Silo Baghouse (BH43) will be replaced by a similar unit (C207) as part of the 2005 expansion project.
2. Final design configuration will include either a wet or dry ESP prior to the TO.

TABLE 1-2. HAP EMISSIONS SUMMARY

	Stack ID	Source ID	APC ID	HCHO (tpy)	Phenol (tpy)	MeOH (tpy)	HAP (tpy)
				Future Potential Emissions			
Current Sources	S001	WESP (Dryers)	WP01	63.0	1.82	14.0	112
Current Sources	S003	System #1	BH03	0.3	--	26.0	26.3
Current Sources	S004	System #2	BH04	0.15	--	8.00	8.15
Current Sources	S010	High Pressure Waste System Baghouse	BH10	0.05	--	0.02	0.07
Current Sources	S011	T&G Sander System Baghouse	BH11	--	--	--	--
Current Sources	S012	T&G Saw Line System Baghouse	BH12	--	--	--	--
Current Sources	S013	Globe Line Saw System Baghouse	BH13	--	--	--	--
Current Sources	S043	Dry Fuel Storage Silo Baghouse	BH43[1]	--	--	--	--
Current Sources	S063	RTO (Press)	RT63	2.20	5.80	4.00	12.2
Proposed Sources	S201	Dryer Exhaust ([W]ESP/TO)	C201[2]	20.4	7.5	2.9	43.4
Proposed Sources	S202	Press Exhaust (TO)	C202	2.23	10.4	13.0	28.5
Proposed Sources	S203	Resinated Fines Baghouse	C203	1.17	--	38.1	39.2
Proposed Sources	S204	Unresinated Fines Baghouse	C204	0.78	--	23.0	23.8
Proposed Sources	S205	Finishing Line Baghouse	C205	0.85	--	2.5	3.32
Proposed Sources	S206	Wet Strand Fines Baghouse	C206	0.26	--	0.6	0.82
Proposed Sources	S207	Dry Fuel Bin Baghouse	C207	0.10	--	0.5	0.59
Proposed Sources	S208	Blowline Baghouse	C208	--	--	--	--
	Facility Wide Total			91	25.5	133	298.4

1. The current Dry Fuel Storage Silo Baghouse (BH43) will be replaced by a similar unit (C207) as part of the 2005 expansion project.
2. Final design configuration will include either a wet or dry ESP prior to the TO.

1.3 PERMITTING REQUIREMENTS

Authority to commence construction and operation must be obtained in the context of three distinct but interrelated permitting programs:

- Georgia State Implementation Plan (SIP)
- Title V of the 1990 Clean Air Act Amendments (CAAA) (as incorporated and implemented in the Georgia SIP)
- Prevention of Significant Deterioration (PSD) (as part of the federal New Source Review (NSR) program)

First, under the Georgia SIP regulations a construction permit must be obtained for any new or modified unit that may result in emissions to the atmosphere. Completed Georgia SIP forms are provided in Appendix A. Second, the Title V program requires that all new and existing major sources of air emissions obtain federally approved operating permits. The proposed project will require a "major modification" of the facility's existing Title V permit. An electronic copy of the Title V application reflecting the proposed facility configuration upon project completion is also included in Appendix A. Finally, the potential to emit of PSD regulated pollutants NO_X, CO, PM, and VOC will exceed 250 tons per year upon project completion. As such, the proposed project is subject to PSD permitting requirements, which are addressed in this document. Additional details regarding regulatory applicability are provided in Section 4.

2. FACILITY AND PROJECT DESCRIPTIONS

Section 2 of this report provides a brief facility description, a review of the current and proposed OSB operations, and an emission unit summary.

2.1 FACILITY DESCRIPTION

Norbord Georgia, Inc. operates an OSB facility located near Cordele, Georgia along Highway 280 West in Crisp County. A facility area map is provided in Appendix B. Mixed southern hardwoods and pine are received by truck, debarked, cut to length, flaked, and conveyed to dryer metering bins. Upon dryer passage, the dry flakes are collected, screened for fines removal, and conveyed to blender metering bins. The flakes are then mixed with wax and resin and formed into a continuous mat. The mat is cut into sections and pressed at high temperature and pressure. Finally, the boards are sanded, trimmed to size, edge coated, and packaged for shipment. As part of the sawing and sanding finishing operations, a portion of the boards are passed through the Tongue & Groove process line.

The major emission units at the facility currently comprise four triple pass rotary dryers, a 210 MMBtu/hr Wellons energy system, and a board press. The energy system combusts woodwaste to generate the required process air to simultaneously dry and transport the wood flakes. The energy system also heats the press plate thermal oils. A wet electrostatic precipitator (WESP) is currently utilized to control PM emissions from the dryers, and a thermal oxidizer (TO) is used to control PM and VOC emissions from the board press. A process flow diagram, facility layout, and Title V operating permit reflecting current operations are provided in Appendix B.

2.2 PROJECT DESCRIPTION

Annual OSB production capacity will increase by 650 MMsf upon project completion. This project seeks agency approval to install up to three rotary dryers, a wood fired energy system,[3] blending and forming machines, a press, and additional finishing capacity. Norbord will install either a wet or dry electrostatic precipitator [(W)ESP], followed by a thermal oxidizer (TO) to control emissions from the new energy system and dryers.[4] A separate TO will be installed to control emissions from the new press. Process flow diagrams and facility layouts reflecting future operations are provided in Appendix B.

2.3 EMISSION UNIT DESCRIPTIONS

Five general process areas – debarking/flaking, drying, blending/forming, pressing, and finishing – are common to most OSB plants and are part of the project scope. Table 2-1 provides a facility wide emission unit summary upon project completion.

[3] Energy system will also include backup natural gas fired burners for startup and emergency operations.

[4] Equipment specifications have not yet been finalized. (W)ESP denotes either a wet or dry ESP throughout the application.

TABLE 2-1. EMISSION UNIT SUMMARY

Source Description	Source Code	Stack ID	Control Description	APCD ID
Wellons/Dryers	WELL, RD01-RD04, GB01-GB04	S001	WESP	WP01
System #1	FLPP	S003	Baghouse	BH03
System #2	RS01-RS04, DB01-DB04, FB01-FB04	S004	Baghouse	BH04
High Pressure Waste System	HPWS	S010	Baghouse	BH10
T&G Sander System	TGSS	S011	Baghouse	BH11
T&G Saw Line System	TGSL	S012	Baghouse	BH12
Globe Line Saw System	GLSS	S013	Baghouse	BH13
Dry Fuel Storage Silo[1]	DFSS	S043	Baghouse	BH43
Press	PRES	S063	RTO	RT63
Energy System/Dryers	RD05-RD07, ES02	S201	(W)ESP/TO[2]	C201
Press	PRS2	S202	TO	C202
Resinated Fines	FLP2, FB05-FB06	S203	Baghouse	C203
Unresinated Fines	RS05-RS06	S204	Baghouse	C204
Finishing Line	L2SD, L2SS	S205	Baghouse	C205
Wet Strand Fines	GB05-GB06	S206	Baghouse	C206
Dry Fuel Bin	DFS2	S207	Baghouse	C207
Blowline	HPW2, DB05-DB06	S208	Baghouse	C208

1. The current Dry Fuel Storage Silo Baghouse (BH43) will be replaced by a similar unit (C207) as part of the 2005 expansion project.
2. Final design configuration will include either a wet or dry ESP prior to the TO.

2.3.1 DEBARKER/FLAKER AND BARK HANDLING/STORAGE

The new debarker/flaker system will be comprised of two or three lines depending on final design criteria and will supply wood to the handling and storage area. The debarker/flaker operations will occur in an enclosed area. The new bark handling and storage system will comprise of an upgraded bark hog, a larger capacity bark bin, a truck unloading station, and an outside bark pile. The bark pile size will vary throughout the year but will likely supply several days of fuel consumption. Similar to the current Title V permit structure, the debarker, flaker, bark handling and storage system were categorized as insignificant activities based on emission levels. Norbord will maintain good housekeeping to minimize any potential emissions.

2.3.2 ENERGY SYSTEM

The new energy system will be a wood fired combustion system with backup natural gas burners for startup operations and emergency situations. The system includes a 285 MMBtu/hr (heat input) combustion unit with a dedicated primary air heater, recuperator heat exchanger, and air preheater. The primary air heater utilizes the hot flue gas leaving the combustion chambers at temperatures approaching 1600 °F to heat air to accomplish the following:

- ▲ Provide hot process air at approximately 1,300 °F to the three new single pass rotary dryers to accomplish the flake drying
- ▲ Provide hot process air to the thermal oil heater (approximately 40 MMBtu/hr), which may be combined with the existing thermal oil heater in the future, to provide thermal oil for the press plates and various air reheat coils

The flue gas leaving the primary air heater is then directed to the recuperator and the air preheater for further heat recovery. The combustion air then exhausts to the dryers to heat the flakes before passing through product cyclones and finally a common (W)ESP (Control Code WP02). The PM, VOC, and HAP laden dryer exhaust gases are routed back to a TO (Control Code C201) for the destruction of entrained pollutants. The proposed energy system was assigned Source Codes ES02 and Stack Code S201. Diagrams depicting the energy system airflows are provided in Appendix B.

2.3.3 DRYERS

The new dryer system will comprise up to three rotary dryers with a combined design capacity of approximately 240,000 lb/hr. The new dryers will be direct fired, single pass units that will receive all the required process air to simultaneously dry and transport the flakes from the energy system detailed above. Each dryer exhaust stream will be routed back to a TO (Control Code C201) for VOC and HAP control via incineration and PM control via the (W)ESP (Control Code WP02) with potentially a portion of the stream also being diverted back to the dryer inlet or even the energy system. Accordingly, the dryers were assigned Source Codes RD05, RD06, and RD07 and Stack Code S201.

2.3.4 FLAKE HANDLING

The new flake handling system will screen the flakes upon dryer passage for fines removal as done under the current facility configuration but sized to support the new added production capacity. PM emissions from the fines removal process along with emissions from the dry bins, dry storage, blenders, and saws will be controlled by a baghouse preceded by a cyclone (Control Code C204). The flake handling system was assigned Source Codes RS05 and RS06 and Stack Code S204.

2.3.5 FORMING AND BLENDING

The new blending system will mix the dried flakes with wax and resin as done under the current facility configuration but sized to support 650 MMsf of annual OSB production. Wax and resin (liquid or powdered) tanks or hoppers will store the required blending materials. PM emissions from the former/blender, mat trimming, and prepress exhaust will be controlled by a baghouse preceded by a cyclone (Control Code C203). Accordingly, the forming/blending system was assigned Source Codes FB05 and FB06 and Stack Code S203. The wax and resin tanks and hoppers are considered insignificant activities based on emission levels.

2.3.6 BOARD PRESS

The new board press system will be designed to support 650 MMsf of annual OSB production on a 3/8" basis. Upon project completion the board press exhaust stream will be routed to a TO(s) System (Control Code C202) for VOC and HAP control via incineration.[5] Accordingly, the board press has been assigned Source Code PRS2 and Stack Code S202.

[5] The Press TO(s) System may also include a PM pre-filter to protect the control equipment.

2.3.7 Sander, Saw, and Finishing Lines

The new sander and saw lines (Tongue and Groove and Globe Line) will sand, trim, and route the OSB panels as done under the current facility configuration but sized to support 650 MMsf of annual OSB production. PM emissions from the sander and saw lines will be controlled by a baghouse preceded by a cyclone (Control Code S205). The sander and saw lines were assigned Source Codes L2SD and L2SS and Stack Code S205, respectively.

The new finishing operations will seal the edges of the OSB sheets with a coating prior to shipment and transportation to arrest moisture penetration as done under the current facility configuration but sized to support 650 MMsf of annual OSB production. Finishing operations include stenciling of the Norbord logo prior to shipment. An aluminum foil backing may also be applied. The paint utilized to seal the edges is water-based but has a small but quantifiable VOC content. Accordingly, the finishing operations are considered insignificant activities based on emission levels.

2.3.8 Dry Fuel Relay and Storage

The new dry fuel relay and storage system will comprise two elements. The first component will pneumatically transport the sanding, trimming, and routing remnants from the sander and saw lines. The second component will pneumatically transport this material (in addition to dust collection and dry fines from the forming and flake screening baghouses) to a storage bin for eventual combustion in the energy system (Source Code ES02). PM emissions from the first dry fuel relay system will be controlled by a baghouse preceded by a cyclone (Control Code C208). PM emissions from the second dry fuel relay system will be controlled by the bin vent (baghouse) on the receiving silo (Control Code C207). The dry fuel relay and storage system was assigned Source Codes HPW2 and DFS2 and Stack Codes S208 and S207, respectively.

3. EMISSION QUANTIFICATION

Addition of the new production line at the Cordele OSB Mill constitutes a modification according to PSD regulations. A modification is subject to PSD permitting if the facility is a major PSD source and if the modification qualifies as a "major modification" (i.e., the net emissions increase of a regulated pollutant exceeds its corresponding PSD Significant Emission Rate). Net emission increase means the amount by which the sum of the following exceeds zero:

(*a*) *Any increase in actual emissions from a particular physical change or change in method of operation at a stationary source; and*

(b) Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable.

Norbord Georgia is a major PSD source, since the facility-wide potential to emit (PTE) levels of PM_{10}, CO, and VOC are greater than 250 tpy. Therefore, emissions from the modification must be less than PSD significant rates for the project to be considered a PSD minor modification. For PSD applicability purposes, the net emission increase is calculated using the following equation:

Modified Source New PTE – Modified Source Past Actual Emissions + Attributable Increases (or Decreases)

where *Modified Source New PTE* is the new PTE from the modified source; *Modified Source Past Actual Emissions* are generally the average actual emissions for the previous two years for the source to be modified; and *Attributable Increases (or Decreases)* are the increases or decreases in emissions that may occur from other facility sources upstream or downstream due to the modification or recent modifications. The methodology for calculating the net emissions increase associated with installation of the new equipment is detailed in the following sections. Emission calculations are included in Appendix C.

3.1 MODIFIED SOURCE NEW PTE

This section presents the methodology used to quantify emissions from the new production line at the Norbord Georgia Mill. Norbord is a source of regulated air pollutant emissions including particulate matter less than 10 µm in size (PM_{10}), volatile organic compounds (VOC), oxides of nitrogen (NO_x), and carbon monoxide (CO).

The combustion of wood in the energy system providing heat for the process dryers and thermal oil heater as well as the combustion of natural gas at the TOs creates by-product pollutants. In addition to combustion process emissions, the transfer and handling of the raw and processed materials results in PM_{10} and VOC emissions from sources such as the dryers and press. PM_{10} emissions are minimized through the inherent use of baghouses and cyclones, which are designed to retain the process materials and to recover wood by-products for combustion or re-use in the process. Total sulfur dioxide (SO_2) combustion emissions at equipment capacity are less than 40 tons per year (tpy).

Table 3-1 shows potential emissions of the new equipment. Emission estimates are based on the proposed equipment design capacities. A description of emission factors used in the calculations is available in Appendix C.

TABLE 3-1. POTENTIAL EMISSIONS FOR NEW EQUIPMENT

				Future Potential Emissions				
				PM	NO_X	CO	VOC	SO_2
	Stack ID	Source ID	APC ID	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Proposed Sources	S201	Dryer Exhaust ([W]ESP/TO)	C201	153	343	343	262	2.63
	S202	Press Exhaust (TO)	C202	17.4	89.4	107	50.1	12.0
	S203	Resinated Fines Baghouse	C203	4.38	--	--	52.0	--
	S204	Unresinated Fines Baghouse	C204	4.38	--	--	39.0	--
	S205	Finishing Line Baghouse	C205	4.38	--	--	4.88	--
	S206	Wet Strand Fines Baghouse	C206	4.38	--	--	39.0	--
	S207	Dry Fuel Bin Baghouse	C207	7.01	--	--	19.5	--
	S208	Blowline Baghouse	C208	2.19	--	--	--	--
	Total (Proposed Sources)			197	433	451	466	14.7

3.2 MODIFIED SOURCE PAST ACTUAL EMISSIONS

For the proposed project, the new production line represents the only additions to the Norbord OSB facility.[6] The present permit action essentially represents the construction of an entirely new facility. The additional line will have a separate heat source, air pollution control devices and finishing areas. Since no existing sources are being modified, the net emissions increase simplifies to the new source PTE shown above.

3.3 ATTRIBUTABLE INCREASES

In addition to the modified and new sources, emissions of other sources at the facility may be impacted due to the modification. The PSD regulations require that associated emissions increases be included in the net emissions increase calculation. As the present permit action essentially represents the construction of an entirely new OSB manufacturing line, no associated emission increases in other areas of the existing plant are expected.

3.4 NET EMISSIONS INCREASE

As mentioned previously, the new production line represents the only additions to the OSB facility, and the net emissions increase simplifies to the new source PTE shown in Table 3-1. The net emissions increase associated with the proposed project are shown in Table 3-2, along with the PSD Significant Emission Rate. Based on emission calculations and the assumptions detailed, the

[6] As part of this project, Norbord will remove the existing Dry Fuel Storage Silo Baghouse (BH43) and replace it with a similar unit. Emissions from the new unit (S207) are included with the proposed sources.

proposed project will require PSD permitting for PM, NO_X, CO, and VOC. HAP emission increases are detailed in Appendix C.

TABLE 3-2. NET EMISSIONS AND PSD SIGNIFICANT EMISSION RATES

	PM (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
Total Potential Emissions Increases	169	433	451	466	15
PSD Significant Emission Rate	15	40	100	40	40
PSD Triggered?	**Yes**	**Yes**	**Yes**	**Yes**	No

4. Regulatory Applicability Analysis and Requirements

The Norbord Georgia OSB Mill is subject to certain federal and state air regulations. This section summarizes the air permitting requirements and the key air quality regulations that apply to the facility. Specifically, applicability of Prevention of Significant Deterioration (PSD) requirements, Title V of the 1990 Clean Air Act Amendments, Compliance Assurance Monitoring (CAM), New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), Stratospheric Ozone Protection, and Georgia State Implementation Plan (SIP) regulations are addressed.

Applicable requirements contained within existing permits are also summarized. This review is presented to supplement and/or add clarification to the information provided on the Georgia Title V modification application, which together fulfill the requirement to include citations and descriptions of applicable statutory and administrative code requirements.

GRAQC 391-3-1-.03(10)(d)6, *Permit Shield*, provides that Georgia EPD may expressly include a provision in the Title V Operating Permit stating that compliance with the conditions of the Permit shall be deemed compliance with all applicable requirements as of the date of permit issuance if:

- ▲ Such applicable requirements are included and are specifically identified in the permit; or
- ▲ The Director, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

Norbord is requesting through this application that Georgia EPD include permit shield provisions in its Operating Permit consistent with this regulation. Therefore, in addition to providing a summary of applicable requirements, this section of the application also provides non-applicability determinations for certain regulations allowing Georgia EPD to confirm that identified regulations are not applicable to the facility. Note that this non-applicability review is limited to those regulations for which there may be some question of applicability specific to the Cordele site. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, *Standards of Performance for Petroleum Refineries*).

4.1 Federal Regulatory Applicability

4.1.1 Prevention of Significant Deterioration Applicability

The Norbord Georgia OSB Mill is located in Crisp County. This area has been designated as an attainment or unclassifiable area for all criteria pollutants with respect to the National Ambient Air Quality Standards (NAAQS).[7] Thus, the plant is potentially subject to PSD permitting requirements for all applicable pollutants. Since the facility is not included on the

[7] 40 CFR § 81.311

so-called "list of 28" source categories, the 100 tpy threshold does not apply to this facility. Thus, the PSD "major" source threshold is 250 tpy for each criteria pollutant.

Taking into account the emission control systems and permit limits, the maximum emissions of four pollutants at future plant capacity and 8,760 hours per year of operation are greater than the PSD major source thresholds. Specifically, emissions of NO_X, CO, PM_{10}, and VOC are greater than the PSD major source threshold.

4.1.2 TITLE V APPLICABILITY

The major source thresholds with respect to the Georgia Title V regulations are 10 tpy of any single HAP, 25 tpy of any combination of HAP, and 100 tpy of other regulated pollutants. Emissions of NO_X, CO, PM_{10}, and VOC exceed the 100-tpy major source threshold along with emissions of HAP exceeding 10 tpy for a single pollutant and 25 tpy of total HAPs. Thus, a Title V Permit is required for the plant. The initial Title V permit for the plant was issued in 2002.

4.1.3 COMPLIANCE ASSURANCE MONITORING

Under the Compliance Assurance Monitoring (CAM) regulations at 40 CFR §64, facilities are required to prepare and submit monitoring plans for certain emissions units with the initial, significant modification, or renewal Title V Operating Permit application. The CAM Plans are intended to provide an on-going and reasonable assurance of compliance with emission limits. Under the general applicability criteria, this regulation only applies to emission units that use a control device to achieve compliance with an emission limit and whose pre-controlled emission levels exceed the major source thresholds under the Title V Operating program. For a subject unit whose post-controlled emissions also exceed the major source threshold, a CAM plan is required to be submitted with the initial Title V Operating Permit application and certain significant modifications to the permit.[8] For a subject unit whose post-control emissions are less than the major source threshold, a CAM plan does not have to be submitted until the first renewal application.

At the Cordele plant, units that could be considered subject to CAM, as a result of this proposed modification, are the new dryers and press. The dryers receive heated exhaust gases from the new energy system. The (W)ESP treats the exhaust of the Energy System, to prolong the life of the dryer TO(s). With post-controlled emissions above the major source thresholds, a CAM plan is now required for the new dryers and the dryer TO(s). The press is also controlled by a TO to meet proposed emission limits. With post-controlled emissions above the major source thresholds, a CAM plan is also required for the new press and the press TO. Appendix A contains Georgia EPD's CAM Plan Application Forms for these units.

The handling and material transfer baghouses are also potentially subject to CAM requirements. However, the purpose of the baghouses is to recover and transfer material

[8] CAM Plans are only required with significant modification applications if the proposed permit revision is applicable to the subject unit, 40 CFR 64.5(a)(2).

within the process. Collected material is used at the facility and not disposed. These units are categorized as inherent process equipment, which are not subject to CAM requirements.

4.1.4 NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards (NSPS) require new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology as specified in the applicable provisions. Potentially applicable NSPS are discussed in this section.

4.1.4.1 NSPS SUBPART A – GENERAL PROVISIONS

NSPS require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the application provisions. All sources subject to a source specific NSPS are also subject to the general provisions of NSPS Subpart A unless specifically excluded. NSPS Subpart A generally requires the following:

- ▲ Initial construction/reconstruction notification
- ▲ Initial startup notification
- ▲ Performance tests
- ▲ Performance test date initial notification
- ▲ General monitoring and recordkeeping requirements
- ▲ Semiannual monitoring system and/or excess emission reports

In the case of the Energy System, a single source-specific NSPS applies: NSPS Subpart Db/Dc discussed below.

4.1.4.2 NSPS SUBPART DC

Subpart Dc applies to steam generating units for which construction, modification, or reconstruction commenced after June 9, 1989 and that has a maximum heat capacity of 100 MMBtu/hr or less but greater than or equal to 10 MMBtu/hr. Norbord has identified the new thermal oil heater (TOH) as being potentially applicable to this regulation as it is a steam-generating unit with a heat capacity of approximately 40 MMBtu/hr. At this time, it is Georgia EPD's opinion that Subpart Db might apply based on a review of applicability determinations and the fact the energy system, which supplies heat to the TOH and dryers, has a heat input capacity of 285 MMBtu/hr. Since the timing of this application submittal is critical, the applicability of Subpart Db and Dc will be handled separately from this permit application. If Subpart Dc applies, the TOH will be subject to a particulate limit of 0.1 lb/MMBTU and an opacity standard of 20%.

4.1.4.3 NSPS SUBPART DB

Subpart Db applies to steam generating units for which construction, modification, or reconstruction commenced after June 19, 1984 and that has a maximum heat capacity greater than 100 MMBtu/hr. As identified above, Norbord will address applicability of this standard outside of this permit application. If Subpart Db is deemed applicable, a particulate standard of 0.1 lb/MMBtu and 20% opacity will apply for the energy system.

4.1.4.4 NSPS SUBPART KB

Subpart Kb applies to each volatile organic liquid storage vessel for which construction, reconstruction, or modification commenced after July 23, 1984. Insignificant storage tanks at the Norbord facility are used to store materials which meet the definition of a volatile organic liquid. However, the volume of each tank is less than 75 cubic meters (19,813 gallons), which is the minimum volume for NSPS Subpart Kb applicability. Therefore, NSPS Subpart Kb does not apply to the storage tanks.

Subpart Kb was amended October 15, 2003 establishing the minimum volume of 75 cubic meters.[9] Prior to the amendment, some storage tanks were subject to Subpart Kb, however, the capacity of each formerly subject tank is less than 75 cubic meters. Therefore, Subpart Kb no long applies to the facility.

4.1.4.5 NON-APPLICABILITY OF ALL OTHER CURRENTLY PROMULGATED NSPS

NSPS are primarily developed for particular industrial source categories. Therefore, the applicability of a particular NSPS to a facility can be readily ascertained based on the industrial source category covered. All NSPS regulations besides those specifically discussed above are categorically not applicable to the Cordele site.

4.1.5 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

National Emission Standards for Hazardous Air Pollutants (NESHAP) establish the maximum degree of HAP emission reductions that is achievable for new or existing sources in specific categories. Potentially applicable NESHAP are discussed in this section.

4.1.5.1 NESHAP SUBPART A - GENERAL PROVISIONS

If a source is subject to a specific NESHAP, then the general provisions of NESHAP Subpart A will apply. As implied, this subpart contains requirements relevant to all affected sources under a specific NESHAP.

[9] 68FR59333

4.1.5.2 NESHAP Subpart DDDD – Plywood and Composite Wood Products

The existing and new dryers and presses are potentially subject to the recently promulgated Plywood and Composite Wood Products (PCWP) MACT standard. Please note an affected source may become exempt from the standard by showing it belongs in a low-risk subcategory. Beyond emission standards, affected sources will also have to comply with notification requirements, implementation of a Startup Shutdown and Malfunction Plan (SSMP), and testing requirements.

In the event Norbord does not present a low-risk subcategory exemption request, the PCWP MACT outlines three potential methods of demonstrating compliance with the regulation for existing and new sources. The first way to demonstrate compliance is a production-based limit on HAP emissions, the second is a add-on control system compliance option with concentration or percent reduction limit for the outlet of an add-on control system, and the third is an emissions averaging compliance option which applies to existing sources only. Each affected source must meet only one of the three compliance options.

Norbord is in the process of evaluating compliance options and will continue to consider the possibility of demonstrating that the affected facility belongs in a low-risk subcategory. This can be done by utilizing risk look-up tables within the standard or conducting a site-specific risk analysis for the regulated toxic pollutants. Further analyses will be conducted by Norbord outside of this application.

4.1.5.3 NESHAP Subpart DDDDD – Industrial, Commercial, and Institutional Boilers and Process Heaters

The recently promulgated Industrial-Commercial-Institutional Boilers and Process Heaters NESHAP, Subpart DDDDD,regulates HAP emissions from solid, liquid, and gaseous-fired steam generating units. The rule regulates boilers and process heaters located at major sources of HAP.

The energy system combusts wood and is located at a major source of HAP emissions. However, the unit is likely not subject to Subpart DDDDD as the primary purpose of the combustion unit is to transport and dry wood flakes. This rule regulates combustion units for which the primary purpose is indirect heat exchange. However, for clear verification, Norbord has contacted EPA for a determination in this instance.

4.1.5.4 NESHAP Subpart ZZZZ – Reciprocating Internal Combustion Engines (RICE)

The RICE MACT was signed on February 26, 2004, and published in the *Federal Register* June 15, 2004. This standard applies to existing four stroke rich burn engines (e.g., gaseous or liquid fuel fired) and all new engines with a site-rating of more than 500 hp and located at a major source of HAP. New engines that are used in emergency service or burn primarily digester and landfill gases are subject to initial notification requirements only. Existing engines (other than four stroke rich burn) have no specific requirements, with a baseline date of December 19, 2002 to determine existing unit status.

Norbord operates diesel RICE as emergency generators. As such, the RICE at the Cordele facility are not subject to any requirements under Subpart ZZZZ:[10]

> *A stationary RICE which is an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing compression ignition (CI) stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, does not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary.*

4.1.5.5 NON-APPLICABILITY OF ALL OTHER CURRENTLY PROMULGATED NESHAPS

As with NSPS, NESHAP are primarily developed for particular industrial source categories. Therefore, the applicability of a particular NESHAP to a facility can be readily ascertained based on the industrial source category covered. All NESHAP regulations, both in 40 CFR §61 and 40 CFR §63, besides those specifically discussed above are categorically not applicable to the Cordele site.

4.1.6 STRATOSPHERIC OZONE PROTECTION REGULATIONS

The requirements originating from Title VI of the Clean Air Act, entitled Protection of Stratospheric Ozone, are contained in 40 CFR §82. Subparts A through E and Subpart G of 40 CFR §82 are not applicable to the Cordele site. 40 CFR §82 Subpart F, Recycling and Emissions Reduction, potentially applies if the facility maintains, repairs, services, or disposes of appliances that utilize Class I or Class II ozone depleting substances. Subpart F generally requires persons completing the repairs, service, or disposal to be properly certified. An appropriately certified technician completes all repairs, service, and disposal of ozone depleting substances from the air conditioners at the facility.

[10] 40 CFR 63.6590(b)(3).

4.2 GEORGIA RULES FOR AIR QUALITY CONTROL

In addition to federal air regulations, GRAQC establishes regulations applicable at the emission unit level (source specific) and at the facility level. The rules also contain requirements related to the need for construction and/or operating permits. Generally applicable facility provisions (e.g., restrictions on open burning) are not included in this discussion.

4.2.1 VISIBLE EMISSIONS

Georgia Rule 391-3-1-.02(b) Visible Emissions limits opacity to 40% except whenever a more stringent limit is given (e.g., Rule (d) for fuel burning). The baghouses within the process are subject to this limit.

4.2.2 FUEL BURNING EQUIPMENT

Georgia Rule 391-3-1-.02(d) Fuel Burning Equipment limits emissions from fuel burning equipment based on heat input capacity. In addition opacity is limited to 20% except for one six-minute period per hour, which may be up to 27%. The Energy System is subject to this rule.

4.2.3 PARTICULATE EMISSION FROM MANUFACTURING PROCESSES

Georgia Rule 391-3-1-.02(e) Particulate Emission from Manufacturing Processes regulates the manufacturing of materials that have the potential to emit particulate emissions. Equations are used to determine the allowable PM emissions from subject processes. The baghouses, dryers, and presses are subject to this rule. However, Norbord operates under more stringent permit limits.

4.2.4 SULFUR DIOXIDE

Georgia Rule 391-3-1-.02(2)(g) Sulfur Dioxide requires that the maximum sulfur content of any fuel combusted in a fuel-burning source with a heat input capacity less than 100 million Btu/hr not exceed 2.5 percent by weight and any combustion source with a heat input capacity greater than 100 million Btu/hr not exceed 3.0 percent by weight. The Energy System (heat input capacity of 285 MMBtu/hr) is subject to this rule.

4.2.5 FUGITIVE DUST

Georgia Rule 391-3-1-.02(2)(n) Fugitive Dust requires that facilities which may generate fugitive dust take all reasonable precautions to prevent such dust from becoming airborne. This rule limits opacity from any fugitive dust source to 20%.

4.2.6 ATLANTA OZONE NON-ATTAINMENT AREA COMBUSTION SOURCE RULES

Georgia EPD has promulgated (e.g., February 16, 2000) restrictions on the NO_X emissions from combustion sources for facilities located in or near the Atlanta ozone non-attainment area. Specifically, these regulations limit NO_X emissions from fuel burning equipment, stationary gas turbines and reciprocating engines. The Cordele site is located in Crisp County, which is outside the designated counties. As such, any stationary emergency generators or fuel burning equipment is not subject to these rules.

5. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) ANALYSIS

Norbord is planning to expand the Cordele OSB Mill to include an additional press, dryers with a wood-fired energy system, and six baghouses associated with handling, blending, forming and finishing processes. The existing sources include a press controlled by an RTO, dryers and thermal oil heater with a wood-fired energy system controlled by a wet ESP, and seven baghouses associated with handling, blending, forming and finishing processes. The existing sources underwent PSD review, including a BACT analysis, in 1988.[11]

5.1 SUMMARY OF BACT DETERMINATION

Table 5-1 provides a summary of emission sources subject to BACT as part of this PSD permit application. The table also provides a summary of control technologies considered, with the control technology alternative selected as BACT identified. The remainder of this BACT analysis provides additional details to support the determinations presented in Table 5-1.

At the time of permit application submittal, Norbord is evaluating the possibility that a TO or similar device will be installed on the existing dryers to minimize emissions of HAP to achieve compliance with (or low-risk designation under) the PCWP NESHAP. In this case, a facility wide net emissions decrease may result for PM/PM_{10}, CO, and VOC making PSD review (including BACT) unnecessary for these pollutants. However, since controls on existing emissions sources may not be required and are not part of this application and project, emission controls on new sources for these four pollutants were evaluated in this BACT analysis.

[11] Georgia Environmental Protection Division - Current Permit No. 2493-081-0054-V-02-0, Effective 6-25-02.

TABLE 5-1. SUMMARY OF EMISSION SOURCES SUBJECT TO BACT

Stack #	Source Description	Pollutants subject to BACT				Control Technologies Investigated	Selected BACT
		PM/PM_{10}	VOC	NO_x	CO		
S1	Dryers in Combination with Energy System	X	X		X	(Wet) Electrostatic Precipitator/TO Combination	(W)ESP/TO System Combination
				X		Selective Catalytic Reduction – Not Feasible	
				X		Selective Non-Catalytic Reduction – Not Feasible	
				X		Water/Steam Injection – Not Feasible	
		X				Baghouse – Not Feasible	
			X		X	RCO – Not Feasible	
				X		Staged Combustion – Not Selected	
				X		Low NO_x Burner	Low NO_x Burner (TO burners)
				X		Flue Gas Recirculation – Not Selected	
				X		Reduced Air Preheat – Not Selected	
				X		Low Excess Air/Oxygen Trim	Low Excess Air/Oxygen Trim
		X	X	X	X	Good Design/Operation	Good Design/Operation (Dryer burners)
S2	Press	X	X		X	TO	TO
		X				Baghouse – Not Selected	
		X				Multiclones/EFB – Not Selected	
				X		Selective Catalytic Reduction – Not Feasible	
				X		Selective Non-Catalytic Reduction – Not Feasible	
				X		Water/Steam Injection – Not Feasible	
				X		Staged Combustion – Not Selected	
			X			Biofilter – Not Selected	
				X		Flue Gas Recirculation – Not Selected	
				X		Reduced Air Preheat – Not Selected	
				X		Low Excess Air – Not Selected	

Stack #	Source Description	Pollutants subject to BACT				Control Technologies Investigated	Selected BACT
		PM/PM_{10}	VOC	NO_x	CO		
				X		Low NOx Burner	Low NOx Burner (TO Burner)
S3	Resinated Fines	X				Baghouses	Baghouse/Good Design
		X	X			RCO/RTO – Not Selected	
S4	Un-Resinated Fines	X				Baghouses	Baghouse/Good Design
		X	X			RCO/RTO – Not Selected	
S5	Finishing Line	X				Baghouse	Baghouse/Good Design
		X	X			RCO/RTO – Not Selected	
S6	Wet Strand Fines	X				Baghouse	Baghouse/Good Design
		X	X			RCO/RTO – Not Selected	
S7	Dry Fuel Bin	X				Baghouse	Baghouse/Good Design
		X	X			RCO/RTO – Not Selected	
S8	Blowline	X				Baghouse	Baghouse/Good Design

Notes:

1. *TO represents thermal oxidizer control technologies, in this case either RTOs, or TCOs.*
2. *The PCWP MACT will require HAP control of the proposed dryers and press. Norbord anticipates that thermal oxidizer and biofilters are control technologies potentially meeting MACT requirements.*

5.2 BACT DEFINITION AND APPLICABILITY

The definition of BACT is found in Section 165(a)(4) of the Clean Air Act or in the PSD regulations under 40 CFR §52.21(j). BACT is defined as:

> *[A]n emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted... [from a] proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of the measurement methodology to a particular emissions limit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by the implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.*

The present BACT analysis presented in this permit application follows U.S. EPA's top down approach for determining BACT.[12] In the top-down approach, progressively less stringent control technologies are analyzed until a level of control considered BACT is reached on the basis of environmental, energy, and economic impacts. The key steps in the top-down process are to:

- Identify viable options
- Eliminate technically infeasible options
- Rank remaining alternatives by control effectiveness
- Evaluate most effective controls; and
- Select BACT.

[12] U.S. EPA, Office of Air Quality Planning and Standards, "Transmittal of Background Statement on 'Top-Down' Best Available Control Technology (BACT)," June 13, 1989.

The sources of information on control alternatives vary for the emission sources being analyzed. The following information resources may generally be consulted in searching for the alternatives:

- On-line U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) system;
- U.S. EPA/State/Local air quality permits;
- Federal/State/Local permit engineers;
- Control technology vendors; and
- Inspection/performance test reports.

Once the technically feasible control alternatives have been identified, they should be ranked in order of control effectiveness, with the most effective control alternative at the top. The ranked alternatives are reviewed with respect to environmental, energy, and economic considerations specific to the proposed sources. However, an applicant proposing the top-rated control alternative need not provide costs and other economic information relative to the other control options. If the analysis determines that the examined alternative is not appropriate as BACT due to any of these considerations, then the next most stringent alternative is subjected to the same review. This process is repeated until a control alternative is justified to represent BACT. The proposed BACT must provide emission limitations, which are at least as stringent as the applicable federally-approved State Implementation Plan (SIP) or the federal NSPS and National Emission Standards for Hazardous Air Pollutants (NESHAP) emission standards.

The impact analysis of the BACT review focuses on environmental, energy, and economic impacts. The net environmental impact associated with the control alternative should be reviewed. This criterion is generally satisfied with the dispersion modeling that is performed as a part of PSD review. The dispersion modeling normally considers a “worst-case” scenario, thus constituting a conservative assessment of the environmental impacts. The energy impact analysis estimates the direct energy impacts of the control alternatives in units of energy consumption. If possible, the energy requirements of the control option are assessed in terms of total and incremental (units of energy per ton of reduction) energy costs. The economic impact of a control option is typically assessed in terms of cost-effectiveness and ultimately whether the option is economically reasonable. Normally, the economic impacts are reviewed on the basis of the annualized cost per ton of pollutant removed.

The BACT evaluation for emissions of NOx, CO, PM/PM_{10}, and VOC as they relate to the sources being added at the Cordele OSB Mill are provided in the following sections of this report. Norbord’s evaluation adheres to the following five basic steps of a “top-down” BACT analysis procedure, as identified by the U.S. EPA in the October 1990 Draft *New Source Review Workshop Manual*.[13]

5.2.1 BACT STEP 1 - IDENTIFY VIABLE OPTIONS

Available control technologies are identified for each emission unit in question. The following methods can be used to identify potential technologies: 1) researching the Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission

[13] U.S. EPA, Office of Air Quality Planning and Standards. *New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting, Draft*. Research Triangle Park, NC. October 1990.

Reduction (LAER) Clearinghouse (RBLC) database, 2) surveying regulatory agencies, 3) drawing from previous engineering experience, 4) surveying air pollution control equipment vendors, and 5) surveying available literature.

5.2.2 BACT Step 2 - Eliminate Technically Infeasible Options

After the identification of control options, an analysis is conducted to eliminate options not technically feasible. A control option is eliminated from consideration if technical difficulties, documented by physical, chemical, or operational principles, preclude the successful use of a control option. This would include process-specific conditions that prohibit the implementation of the control or if the highest control efficiency of the option would result in an emission level that is higher than any applicable regulatory limits.

5.2.3 BACT Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Once technically infeasible options are removed from consideration, the remaining options are ranked based on their control effectiveness. If there is only one remaining option or all of the remaining technologies could achieve equivalent control efficiencies, ranking based on control efficiency is not required.

5.2.4 BACT Step 4 - Evaluate Most Effective Controls and Document Results

Beginning with the most efficient control option in the ranking, detailed economic, energy, and environmental impact evaluations are performed. If a control option is determined to be economically feasible without adverse energy or environmental impacts, it is not necessary to evaluate the remaining options with lower control efficiencies.

The economic evaluation focuses on the cost effectiveness of the control option. Costs of installing and operating control technologies are estimated and annualized following the methodologies outlined in the U.S. EPA's OAQPS Control Cost Manual (CCM) and other industry resources. Cost effectiveness is expressed as dollars per ton of pollutant controlled.[14] Objective analyses of energy and environmental impacts associated with each option are also conducted. Both beneficial and adverse impacts are discussed and quantified.

5.2.5 BACT Step 5 - Select BACT

In the final step, one pollutant specific control option is proposed as BACT for each emission unit under review based on evaluations from the previous step.

The BACT requirements of the PSD program only apply to the emission units that are newly installed or physically modified for those pollutants that are subject to PSD review. As stated earlier, this analysis considers only new sources at the facility since no existing sources will undergo physical modifications. Please note, however, that the PCWP MACT may require Norbord to add TO(s) or

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[14] U.S. EPA, Office of Air Quality Planning and Standards. *OAQPS Control Cost Manual*, 6th edition. EPA 452/B-02-001. Research Triangle Park, NC. June 2003.

similar device(s) for HAP control, depending on the exact compliance option chosen. This project is considered a separate issue from the BACT analysis.

5.3 Cost Evaluation Methodology

Cost evaluations for the BACT analysis are performed following general procedures outlined in the OAQPS CCM. The equipment costs are estimated based on vendors' quotes or CCM calculation algorithms. An electricity cost of $0.042 per kilowatt hour (kW-hr) and a natural gas cost of $8.19 per MMBtu are used to estimate utility costs.[15] Dollar amounts are represented in 2004 year-to-date terms unless otherwise indicated. Total capital costs are annualized over a 15-year period using a 7% annual rate of return.

To calculate the cost effectiveness of a particular control option, the capital investment and operating costs are annualized and then divided by the annual emissions reduction of the control option. The emissions reduction is the difference between the pre-BACT emission rate and the emission rate that corresponds with the control option.

The U.S. EPA has stated that economic thresholds are continually changing due to the case-by-case nature of the analysis. They are, however, dictated by the economic evaluations in the most recent BACT determinations.[16] According to the Ne*w Source Review Workshop Manual*, a proposed technology can be eliminated from consideration if the applicant has provided adequate proof that the selection of such a technology results in cost/economic impacts beyond the range normally incurred for control of that pollutant in similar applications.[17]

5.4 BACT Determination for Proposed Norbord Georgia Operations

This BACT analysis has been prepared based on conservative emission estimates of PM/PM_{10}, VOC, NO_X, and CO resulting from continuous operation of the equipment identified in Table 5-1.

Control technologies considered in the BACT analysis must meet applicable New Source Performance Standards (NSPS) to be considered viable.[18] Thus, the applicable NSPS emission limits must be determined. The thermal oil heater is considered a steam generating unit as defined by 40 CFR Part 60 Subpart Db or Dc and thus will be subject to one of these standards. At the time of preparing this analysis, it is EPD's judgement that the new energy system and not just the thermal oil heater will be subject to Subpart Db. Additionally, EPD has stated that as a wood-fired unit the energy system would only be subject to the particulate standard of 0.1 lb/MMBTU and subsequent

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[15] Norbord Georgia facility year to date figures as of September 2004.

[16] Personal communication. Telephone conversation between Stanley Spruell (EPA Region 6) and Jenni Salathiel (Trinity), April 7, 2000.

[17] U.S. EPA, Office of Air Quality Planning and Standards. *New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting, Draft*. Research Triangle Park, NC. October 1990.

[18] *Ibid*., "When developing a list of possible BACT alternatives, the only reason for comparing control options to an NSPS is to determine whether the control option would result in an emissions level less stringent than the NSPS. If so, the option is unacceptable."

opacity standard of 20%. Upon further investigation, however, it is Norbord's belief that only the thermal oil heater and not the new energy system will actually be subject to Subpart Dc which is less exhaustive than Subpart Db. However, as additional discussions will be required between Norbord and EPD, no further information is included other than Norbord will conform to whichever standard is eventually deemed applicable. No other NSPS apply at this time to any of the emission units under consideration in this BACT analysis.

As mentioned previously in this analysis, Norbord will also meet the requirements of the PCWP MACT standard. Generally, the benchmark control technology for HAP reduction will be thermal oxidizers, and this technology has been chosen as BACT in this analysis for VOC and CO emissions and in conjunction with a (W)ESP for control of PM/PM_{10} emissions. Since Norbord intends to comply with the MACT standard, only currently accepted MACT VOC control technologies were reviewed. Note that one method of achieving compliance with the MACT performance standard for controlling HAP from PCWP dryers and presses is demonstrating 90% or greater total hydrocarbons (THC) removal.

5.4.1 IDENTIFY ALL CONTROL TECHNOLOGIES

The first of the five steps in a top-down BACT analysis procedure is to evaluate control technologies for each pollutant. Table 5-2 presents the control technologies evaluated in the BACT analysis for Norbord Georgia. As discussed later in this analysis, combinations of technologies are necessary to assure proper operation of a particular technology.

TABLE 5-2. CONTROL TECHNOLOGY ALTERNATIVES IDENTIFIED FOR THE BACT ANALYSIS

Pollutant	Control Technology
PM/PM_{10}	Baghouse Electrostatic Precipitator (ESP) Wet Electrostatic Precipitator (WESP) Good Design/Operation Multiclones Electrified Filterbed (EFB) Cyclone
VOC*	Thermal Oxidizers – Thermal Catalytic Oxidation (TCO)/Regenerative Thermal Oxidation (RTO) Biofilter Good Design/Operation
NO_X	Selective Non-catalytic Reduction (SNCR) Selective Catalytic Reduction (SCR) Low NO_X Burners Water/Steam Injection Flue Gas Re-circulation Reduced Air Preheat Staged Combustion/Overfire Air Low Excess Air/Oxygen Trim Good Design/Operation
CO	Thermal Oxidizers – Thermal Catalytic Oxidation (TCO) and Regenerative Thermal Oxidation Good Design/Operation

* The proposed dryer will be equipped with a (W)ESP and TO. The combustion environment within the TO will in itself cause further particulate reduction.

5.4.2 ELIMINATE OPTIONS NOT TECHNICALLY FEASIBLE

The second of the five steps in a top-down BACT analysis procedure is to eliminate control technologies not technically feasible. A control option is eliminated from consideration if technical difficulties, documented by physical, chemical, or operational principles, preclude the successful use of a control option. The following control technologies were determined to be technically infeasible considering processes at Norbord Georgia.

5.4.2.1 BAGHOUSE – PM/PM_{10} CONTROL – ROTARY DRYERS WITH WOOD FIRED ENERGY SYSTEM

A baghouse, also referred to as a fabric filter, consists of a number of fabric bags placed in parallel. The gas stream is filtered when it passes through the bags, and PM/PM_{10} is collected on the surface of the fabric. The collected PM/PM_{10} is periodically removed from the bags to hoppers located beneath the bags by reversing airflow or shaking the filters in an isolated compartment of the baghouse, or by short blasts of high-pressure air (or pulsejet).

A baghouse can be designed to remove up to approximately 99 percent of PM/PM_{10} downstream of a primary dust collector, provided that the gas stream is within acceptable parameters. The exhaust from the rotary dryers has an exit temperature around 230 °F and a moisture content of 30% by volume. The moisture content of this stream is high enough that it may cause "blinding" (i.e., plugging) of the fabric filter. This will in turn result in lower airflow rates, greater pressure drop, increased bag wear, and finally reduced PM/PM_{10} control efficiency. In addition, there are no entries found in a general RBLC wood fired combustion search showing a baghouse as BACT for PM/PM_{10} from a combination wood-fired burner/dryer operation like the rotary dryers and Energy System (see Tables 5-3 and 5-4 following this section). Therefore, a baghouse is considered not technically feasible for this application.

5.4.2.2 Regenerative Catalytic Oxidation – VOC Control – Rotary Dryers with Wood Fired Energy System

RCO technology is widely used in the reduction of VOC emissions. Catalytic oxidation systems employ a catalyst bed to reduce VOC oxidation temperatures to about 600 °F – 900 °F (from 1,300 °F – 1,800 °F seen in typical thermal oxidizers). RCOs utilize a ceramic bed in order to recapture the heat of the gas stream exiting the combustion zone. RCOs can achieve up to 95% recovery of the thermal energy input to the system. It should be noted that the recently promulgated PCWP MACT requires destruction efficiency that equates to at least 90% THC or HAPs removal. However, there are no requirements for a specific type and configuration of air pollution control (APC) device.

RCO technology is not considered technically feasible for dryer applications due to the level of PM/PM10 loading. Even with highly efficient upstream PM/PM10 control, catalyst blinding, poisoning, plugging, or masking can occur in this type of application and will significantly reduce the efficiency of the control device. Industry experience has shown that RCO technology is not appropriate for VOC control of rotary-type wood chip dryers. In addition, RCO technology was not identified in a recent RBLC search as a BACT technology selection for rotary dryers (see Table 5-4). Therefore, it is eliminated as a potential control technology.

5.4.2.3 Selective Catalytic Reduction – NO_X Control – Rotary Dryers with Wood-fired Energy System

Selective Catalytic Reduction (SCR) processes are based on the reaction of NO_X with ammonia (NH_3) in the presence of a catalyst to form nitrogen (N_2) and water (H_2O). The function of the catalyst is to lower the activation energy of the NO_X decomposition reaction which, in turn, lowers the temperature necessary to carry out the reaction. The desired chemical reaction is:

$$NH_3 + NO + \frac{1}{4}O_2 \rightarrow N_2 + \frac{3}{2}H_2O \qquad \text{(Equation 5-1)}$$

SCR has a nominal NO_X removal efficiency of approximately 70% to 90%.[19]

SCR technology is not considered feasible for the rotary dryers with the Energy System for two key reasons. To avoid the possibility of the alkalinity of wood ash poisoning the catalyst, the SCR system would be installed downstream of a particulate control device. However, the operating flue gas temperature downstream of the rotary dryers is expected to be below the required temperature range of 550 to 750 °F for SCR.[20] At this lower temperature for either combustion device at Norbord Georgia, NH_3 will not react with NO_X, and both NH_3 and NO_X would be emitted into the atmosphere. Alternatively, the gas stream can be reheated to the proper SCR operating temperature, but this would require a significant amount of heat input (e.g., duct burner), at additional cost and generating additional emissions.

Additionally, the high moisture content of a flue gas stream will adversely effect the efficiency or reheat, further making SCR infeasible.[21] Therefore, SCR is not considered technically feasible for the rotary dryers in conjunction with the Energy System. Finally, it should be noted that the RBLC does not indicate that SCR technology has been successfully demonstrated on wood-fired combustion units.

5.4.2.4 SELECTIVE NON –CATALYTIC REDUCTION – NO_X CONTROL – ROTARY DRYERS WITH WOOD FIRED ENERGY SYSTEM

SNCR processes are based on the reaction of NO_X with NH_3 or urea to form N_2 and H_2O. The desired chemical reaction is:

$$NH_3 + NO + \frac{1}{4}O_2 \rightarrow N_2 + \frac{3}{2}H_2O \qquad \text{(Equation 5-2)}$$

The SNCR process chemistry is identical to that of SCR, but process conditions are radically different. Since a catalyst bed is not part of this control technology, a narrow temperature window of 1,600 to 2,200 °F and a residence time ranging from approximately 0.1 to 1.0 seconds, depending on the temperature, are required. At a higher temperature, the rate of a competing reaction for the direct oxidation of NH_3 becomes significant. At a lower temperature, the rates of NO_X reduction reactions become too slow, resulting in the release of NO_X and NH_3 to the atmosphere. In addition, where SCR is an "add-on" control scheme, SNCR introduces the NH_3 in the combustion unit.

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[19] Chemical Engineering Progress. *Select the Right NOx Control Technology.* New York, NY: American Institute of Chemical Engineers, January 1994. P.32.

[20] Air & Waste Management Association, *Air pollution Engineering Manual* (New York, NY: Van Nostrand Reinhold, 1992), p.243.

[21] Chemical Engineering Progress. *Properly Apply Selective Catalytic Reduction for NO_X Removal.* New York, NY: American Institute of Chemical Engineers, January 1994. P.41

After reviewing information obtained from vendors[22] familiar with the existing and proposed wood fired energy system, data from permit reviews, and other research, Norbord determined that the SNCR technology is not technically feasible for this application. Simply, cells within the proposed wood fired energy system are not capable of maintaining temperatures within the aforementioned range required for NO_X removal. While vendors suggest that under ideal conditions (all cells between 1,600 to 2,200 °F) NO_X removal as high as 50% could be achieved, it is unusual to have the cells maintain consistent temperatures above 1,600 °F. The causes of temperature fluctuations in the cells vary with heat and moisture content of the wood fuel to shifting feed rates for the dryers , among other factors. Because of these fluctuations, vendors have stated that ammonia slip will occur to varying degrees, regardless of the temperature in the wood fired energy system. The only way to guarantee low levels of ammonia slip would be to add reheat to the system, which would increase NO_X formation. Additionally, added heat to the dryers is not a desired consequence due to several factors including potential fire hazards.

Another concern regarding the SNCR technology is the impact of ammonia slip on the product. One vendor familiar with the existing energy system suggested that regardless of the temperature within the wood fired energy system, ammonia slip would occur though potentially at low levels. Since adding NH_3 to the wood fired energy system and, therefore, into the stream of gas that contacts the wood products in the rotary dryers, would have an unknown effect on the quality and stability of the final product, Norbord is wary of further pursuing this technology. As indicated to Norbord, the only way to minimize ammonia slip is to increase heat to the wood fired energy system and dryers, an option already discounted from consideration in the previous paragraph.

With regard to ammonia slip, Norbord reviewed several documents to ascertain potential adverse effects for wood-fired burners and boilers. One "White Paper" document[23] explained that ammonia slip will cause the formation of salts that corrode and plug downstream components. These salts also collect in the ash and other materials removed by the control device making disposal of ash and other collected materials very difficult. It is assumed, therefore, that additional costs and significant downtime would be required for disposal of waste material and maintenance of the entire system. As Norbord will be relying on a (W)ESP and thermal oxidizer for VOC, CO, and PM_{10} removal, it is also assumed that ammonia slip would have adverse affects on components of these air pollution control technologies (APCs) and thus reduce the removal

[22] Norbord contacted The Teaford Company, Inc. and reviewed information from Environex, Inc.

[23] Institute of Clean Air Companies (ICAC, May 2000). Information Taken From *Technical Support Document for Prevention of Significant Deterioration Darrington Cogeneration Facility.* Darrington, Washington (July 2004).

efficiency of a (W)ESP and TO. Reduced efficiency and operational capability of the APCs would, of course, be unacceptable.

There can be no guaranteed removal and the possible adverse effects on production activities and equipment is unacceptable. Therefore, for the purposes of this BACT, Norbord considers SNCR to be infeasible.

5.4.2.5 WATER/STEAM INJECTION – NO_X CONTROL – ROTARY DRYERS WITH WOOD FIRED ENERGY SYSTEM

For the reasons described in the following paragraphs, WSI technology was eliminated from this analysis for rotary dryers in conjunction with the wood fired energy system.

Water/steam injection (WSI) is not an add-on control technology. WSI is the process of injecting water or steam into the combustion chamber so as to act as a thermal ballast to the combustion process. This thermal ballast effectively lowers the combustion temperature by allowing the water to absorb part of the thermal energy released by the combustion, thereby inhibiting the formation of thermal NO_X. The introduction of moisture into the wood fired energy system, whose purpose is to generate a hot, dry gas stream that is used to dry wood wafers in the rotary dryers, is counterintuitive to the purpose of the wood fired energy system, which is to dry wood strands in the rotary dryers. In addition, wood fuel introduced into the energy system already contains sufficient water to cool flame temperature. Thus, WSI is not considered to be a technologically feasible option for the rotary dryers with the wood fired energy system.

In addition, this technology is not identified on the RBLC as a control alternative for rotary dryers and wood-fired combustion units similar to those found at Norbord Georgia. Tables 5-4 and 5-5 at the end of this section present summaries of a recent RBLC search for NO_X control of rotary dryers and wood–fired combustion units.

5.4.2.6 VARIOUS NO_X CONTROL TECHNOLOGIES – PRESS

For the purposes of clarification, Norbord will briefly review potential NO_X control technologies for the press. The press itself emits very little, if any, NO_X emissions. However, the TO will produce thermal NO_X based on the nature of its operation utilizing high temperatures for VOC destruction.

A review of the RBLC, information provided by control technology vendors, and various permits for similar operations indicates that many technologies such as SCR, SNCR, Water/Steam Injection, Staged Combustion, FGR, and Reduced Air Preheat are not viable options for TOs. As will be briefly mentioned later, the most prevalent technologies used in RTOs are low-NO_X burners and good design.

5.4.3 RANK REMAINING CONTROL TECHNOLOGIES BY CONTROL EFFECTIVENESS

The third of the five steps in a top-down BACT analysis procedure is to rank remaining control technologies by control effectiveness as in Table 5-7. Please note *these are provided for informational and ranking purposes only* that should not be construed as emission limits or enforceable restrictions. Eliminated control technologies identified in Section 5.4.2 are excluded from this table. The control efficiencies are vendor quotes, when available, or accepted industry literature values.[24]

TABLE 5-7. REMAINING CONTROL TECHNOLOGIES RANKED BY EFFECTIVENESS.

Process Equipment	Pollutant	Control Technology	Control Efficiency
Rotary Dryers/Wood Fired Energy System	PM/PM_{10}	Wet Electrostatic Precipitator/TO Mutliclone/EFB EFB Wet Electrostatic Precipitator Electrostatic Precipitator Good Design/Operation	90%-95% 85%-95% 80%-90% 70%-90% 70%-90% Base Case
	VOC	Wet Electrostatic Precipitator/TO Good Design/Operation	85%-90% Base Case
	NO_X	Low-NO_X Burners (TO and Wood Fired System) Flue Gas Recirculation Reduced Air Preheat Low Excess Air/Oxygen Trim Good Design/Operation	5%-40% 5%-40% 5%-25% 10% Base Case
	CO	Wet Electrostatic Precipitator/TO Good Design/Operation	50%-75% Base Case
Product Handling, Finishing, Blending/Forming	PM/PM_{10}	Baghouse ESP Wet Electrostatic Precipitator Multiclones/EFB EFB	95%-99% 75%-98% 90%-95% 85%-95% 80%-90%

[24] For example, representative NO_X control efficiencies were taken from Chemical Engineering Progress. *Select the Right NO_x Control Technology*. New York, NY: American Institute of Chemical Engineers, January 1994. P.34, Table 2.

TABLE 5-7. REMAINING CONTROL TECHNOLOGIES RANKED BY EFFECTIVENESS (CONTINUED).

Process Equipment	Pollutant	Control Technology	Control Efficiency
	VOC	TO - RCO/RTO Due to very low inlet VOC concentration from a baghouse, a TO would not be able to achieve high removal efficiency] Good Design/Operation	50%-90% Base Case
Press Exhaust	PM/PM_{10}	Baghouse ESP Wet Electrostatic Precipitator Multiclones/EFB EFB TO - RCO/RTO Good Design/Operation	95%-99% 75%-98% 90%-95% 85%-95% 80%-90% 75%-85% Base Case
	VOC	TO - RCO/RTO Biofilter	90%-95% 50%
	CO	TO - RCO/RTO Good Design/Operation	50%-75% Base Case
	Nox	Low NOx Burner Good Design/Operation	5?%-40% Base Case

5.4.4 EVALUATE MOST EFFECTIVE CONTROLS AND DOCUMENT RESULTS

The fourth of the five steps in a top-down BACT analysis procedure is to evaluate the most effective control and document the results. This step has been performed for each remaining control technologies on the basis of economic, energy, and environmental considerations, and is described below.

5.4.4.1 ROTARY DRYERS WITH WOOD FIRED ENERGY SYSTEM UNIT- PM/PM_{10}, CO, AND VOC CONTROL: (WET OR DRY) ELECTROSTATIC PRECIPITATOR WITH THERMAL OXIDIZER

Wet or dry electrostatic precipitators [(W)ESP] are used to control particulate matter emissions at high efficiencies. The quench chamber ahead of the WESP can be considered to be a high-energy wet scrubber as well. A (W)ESP followed by a thermal oxidizer, as will be discussed further regarding VOC reductions, is the control option that will result in the lowest particulate matter emissions. A thermal oxidizer, although mainly a device for controlling VOC emissions, can combust the wood particles in the gas stream and thus reduces particulate matter emissions even further.

A wet electrostatic precipitator (WESP) is currently used to control particulate matter emissions from the existing dryers and was previously determined to be BACT, though it should be noted that facility does not currently have a TO on the existing dryers following the WESP. It should also be noted that exhaust gases pass through product cyclones on the dryers prior to reaching the WESP.

(W)ESP technology is considered to be necessary to prevent fouling and plugging of the TO given the nature of the emissions from the rotary drying operation. Table D-1 in Appendix D presents a cost analysis for a WESP/TO system for the rotary dryers. The analysis shows an initial capital investment of approximately $11,702,500, a total annual cost of $2,804,018, and a cost per ton removed value of $1,738 for VOC.

Dry electrostatic precipitators (ESP) are commonly used in industry to control PM/PM_{10} emissions from process units with an average of approximately 98% efficiency.[25] ESP technology induces a charge on the particles in an exhaust stream. The charged particles are then collected onto oppositely charged electrodes where they are held until the electrodes are cleaned. Cleaning is accomplished by "rapping" the electrodes and allowing the particles to fall to a collector below the electrodes. The disadvantage of this process is that during rapping there is a level of re-entrainment of collected particles into the exit stream.

At this time Norbord is considering utilizing an ESP/TO combination rather than a WESP/TO combination for various reasons. Norbord believes emission rates for PM/PM_{10}, CO and VOCs would be unaffected. Therefore, Norbord requests that either technology (ESP or WESP) in combination with a TO be considered as BACT.

Generally, TO(s) are considered the benchmark to comply with the Plywood and Composite Wood Products MACT, and the (W)ESP is essential for particulate removal prior to the TO(s) ensuring optimum VOC/HAP removal. Given that the (W)ESP/TO technology represents the highest control efficiency of the technically feasible options for CO, PM/PM_{10} and VOC for the rotary dryers, no further analysis is required for any remaining PM/PM_{10}, CO and VOC control options.

[25] *Ibid*., Electrostatic Precipitator Section, Table 5.2-1.

5.4.4.2 ROTARY DRYERS WITH WOOD FIRED ENERGY SYSTEM AND TO(S) – NO_X CONTROL

5.4.4.2.1 LOW-NO_X BURNERS

Low-NO_X burners are designed to achieve the internal combustion staging effect internally. The air and fuel flow fields are partitioned and controlled to achieve the desired air/fuel ratio, which reduces NO_X formation and results in complete burnout within the combustion device. Low-NO_X burners are applicable to combustion devices with circular burner designs. Significant impacts to consider for low-NO_X burners are forced-draft fan capacity, flame length, design compatibility, and turndown flame stability.

Low-NO_X burners, by their design, work by carefully controlling the air to fuel ratio in different areas of the flame. As such, it is not possible to design a low-NO_X burner for solid fuel fired units, such as the wood fired energy system. However, low-NO_X burners can be used in the TOs and proposes the use of lo-NOx burners in the TO as part of the NOx BACT for the rotary dryers/wood fire energy system.

5.4.4.2.2 FLUE GAS RECIRCULATION

Flue gas recirculation (FGR) is a combustion design technique used to reduce the temperature of combustion, thereby reducing thermal NO_x formation. The recirculated flue gas is usually on the order of 10-20% of the combustion air in order to make an effective reduction in NO_x emissions.

Based on the wood fuel combusted, thermal NO_x is expected to be only a minor constituent of total NO_x formation. Furthermore, by recirculating this required level of flue gas, the heat capacity of the energy system will be significantly reduced. These burners would be unable to maintain current operational levels, resulting in reduced production from the entire process. This is an unacceptable economic consequence of FGR, and is therefore eliminated as an economically feasible option.

FGR is not identified in the RBLC as a selected NO_x control technology for OSB mills and for this type of energy system (see Tables 5-3, 5-4 and 5-5).

5.4.4.2.3 REDUCED AIR PREHEAT

Reduced air preheat reduces NO_x emissions from a burner unit by lowering the flame temperature in the burner. However, this technology only has merit in combustion units utilizing natural gas or low-nitrogen-content fuel oils.[26] Similar also to FGR and WSI, there is an efficiency penalty associated with the use of reduced air preheat that produces undesirable economic consequences for Norbord, particularly given the economic costs associated with the (W)ESP/TO for CO, PM/PM_{10}, and VOC control. This technology is therefore eliminated as an option.

Reduced air preheat is not identified in the RBLC as a selected NO_x control technology for OSB mills and for this type of energy system (see Tables 5-3, 5-4, and 5-5).

5.4.4.2.4 LOW EXCESS AIR/OXYGEN TRIM

Another combustion technology involves low excess air operation, or reducing the excess air level to the point of some constraint, such as CO formation, flame length, or flame stability. An inconsistent wood fuel moisture content or nitrogen composition, like that burned in the furnace, may result in significant fluctuations in heating value, thereby reducing the NOx emissions reduction effectiveness Nonetheless, since it is technically feasible as a control option, the energy system will be designed with a low excess air/oxygen trim system.

Norbord believes that the BACT limit proposed for the wood fired energy system and TO burners using Low Excess Air/Oxygen Trim for wood-residue combustion and low NO_X burner(s) in the TO as control techniques represent a NO_X limitation consistent with other RBLC determinations, including those utilizing low-NO_X burner technology.

5.4.4.3 PRODUCT HANDLING, FINISHING, BLENDING/FORMING – PM/PM_{10}: BAGHOUSE

There are several proposed sources, some contained within building enclosures, that emit particulate from the handling, finishing, blending and forming operations at the facility. Though most of these sources could potentially be eliminated as permitted sources based on their location, baghouses are necessary for proper operation of the mill and insurance of safe working conditions. For clarification, all of these baghouses are proposed to vent outside facility building enclosures.

[26] Chemical Engineering Progress. *Select the Right NOx Control Technology.* New York, NY: American Institute of Chemical Engineers, January 1994. P.35

As baghouses are the most effective control technology for PM/PM_{10} removal with regard to the aforementioned applications, no other technologies were considered. It should be noted that baghouses are currently used for similar existing sources at the site and have adequately performed their function through the life of the facility. Accordingly, care will be taken to adequately specify the size and design the baghouses for proper particulate removal. A cost analysis is not included as the cost and operation of a baghouse are within acceptable levels.

5.4.4.4 PRODUCT HANDLING, FINISHING, BLENDING/FORMING – VOC CONTROL: GOOD DESIGN/OPERATION

Small amounts of VOC emissions may occur during product handling, finishing, blending and forming, and be likewise emitted from five of the six baghouses. The quantities are expected to be small based on information obtained from testing at similar Norbord facilities.

While TO technology is a proven technology to control VOCs from the wood processing industry, this technology has only been applied to those units with high VOC emissions potential. The economic costs associated with TO technology, as well as the less favorable impacts considering the entire lifecycle of this control technology, deem TO technology economically not feasible for these minor sources of VOC emissions (see Table D-2). Thus, good design/operation is deemed BACT for these sources.

5.4.4.5 PRESS – VOC CONTROL

5.4.4.5.1 THERMAL OXIDIZER SYSTEM(S)

TO technology is the highest rated VOC control option available to the press. The existing press at Norbord Georgia successfully controls VOC and HAP emissions with the use of a TO, and in addition to be the benchmark air pollution control equipment to comply with the recently promulgated PCWP MACT, Norbord intends to install a TO on the proposed press. As a TO is deemed the highest rated VOC control option, no further analysis of this technology is warranted. A TO is therefore proposed as BACT for VOC control.

5.4.4.5.2 BIOFILTER

For the purposes of comparison, a biofilter is the next available technology suitable for this application. Biofiltration is a process in which living organisms are used to “consume” the VOC present in a waste stream. Biofiltration is still a relatively new control technology and its success in this type of application is still being evaluated for acceptable long-term operation. Biofilters appear to be technically feasible only for an exhaust stream with temperatures below approximately 120 °F. Though a biofilter has some potential benefits such as lower NOx emissions, this technology is considered to be less effective for VOC removal as compared to thermal oxidizers and would likely be less effective for particulate removal as well. This technology has been included, however, because it is an accepted PCWP MACT control device.

5.4.4.6 PRESS – PM/PM_{10} CONTROL

5.4.4.6.1 BAGHOUSE

While fabric filters (baghouses) are very common, highly effective, and modestly expensive means of preventing PM/PM_{10} emissions, the RBLC records show that practically no reconstituted wood processing operation employs a baghouse for PM/PM_{10} control on a wood press (see Table 5-6). This is likely influenced by the opportunity for the baghouse to be blinded easily by the waxes and resins used prior to the wood process operations. Also possibly influencing the decision by industry to not consider baghouses for wood press PM/PM_{10} control is the likely scenario that a significant fraction of the PM/PM_{10} emissions occur as the condensable fraction. This result appears to be supported by recent U.S. EPA emission factor guidance.[27]

Table D-3 in Appendix D presents an economic evaluation of a fabric filter installation for the wood press. These values were originally estimated in 1984 dollars and scaled to first quarter 2000 dollars using the Marshall & Swift Equipment Cost Index as found in Chemical Engineering magazine.[28] This analysis estimates an initial capital investment of approximately $3,113,000, a total annual cost of $700,609 and a cost per ton removal of $26,060.

Due to the high cost per ton PM/PM_{10} removal from a baghouse installation, and the potential technical difficulties associated with possible blinding, a baghouse is not selected as the BACT control for the wood press at Norbord. Furthermore, it is understood that other available similar mechanical control technologies (ESP, WESP, Multiclones, EFB) are technically more involved as well as more costly. Thus, these alternatives are also removed from further consideration as BACT for PM/PM_{10}.

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[27] U.S. EPA Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 10.6.1, Table 10.6.1-5, March 2002.

[28] Chemical Engineering "Marshall & Swift Equipment Cost Index" July 2000.

5.4.4.6.2 TO - RTO/RCO

Typically, press TOs will be equipped with a prefilter, cyclone, drop box or other device to remove larger particles that could blind the TO. As an TO is already proposed as BACT for VOCs and other more efficient particulate control devices have been eliminated, no further control options are reviewed and a TO is proposed as BACT for PM. Please also note that a pretreatment device will be installed with the TO, but at this time and for the purposes of this BACT analysis no specific prefilter is mentioned as it is considered part of the TO.

5.4.4.7 PRESS – CO CONTROL

Given that the TO control technology option has been proposed as BACT for control of VOC emissions, it is assumed that an economic evaluation of the removal costs of CO emissions from the wood press will not be necessary.

In addition, given the minor nature of CO emissions from the wood press, Norbord proposes that good design/operation be established as the control technique representing BACT from the wood press/TO for CO emissions.

5.4.4.8 PRESS – NO_X CONTROL

As briefly mentioned earlier, NO_X control for TOs typically has been observed in reviews of the RBLC database and permits for similar operations to be low NO_X burners along with good design and operation. As this technology is commonly accepted no further technologies or analyses were reviewed.

5.4.5 SELECT BACT

The fifth and final step in a top-down BACT analysis procedure is the selection of the BACT level of control for each pollutant. Per U.S. EPA guidance, BACT is considered to be the most effective control technology not eliminated by the previous four steps of the analysis protocol. The BACT selections are summarized in Table 5-9.

TABLE 5-9. BACT SELECTION AND RESULTING EMISSION RATES

Process Equipment	Pollutant	BACT Determination	Proposed BACT Emissions Limits	Annual Emission Rate (ton/year)
Source S1 - Rotary Dryers/ Wood Fired Energy System	PM/PM_{10}	(W)ESP/TO**	28.5 lb/hr, 0.02 gr/dscf	125
	VOC	(W)ESP/TO**	59.8 lb/hr, or 90% control	262
	NO_X	TO with Low NO_X Burner	78.4 lb/hr, 0.25lb/MMBtu	343
	CO	(W)ESP/TO**	78.4 lb/hr, 0.25lb/MMBtu	343
Source S2 – Press Exhaust	PM/PM_{10}	TO	4.0 lb/hr, 0.07 gr/dscf	17.4
	VOC	TO	11.4 lb/hr, or 90% control	50
	NO_X	TO with Low NO_X Burner	20.4 lb/hr, 0.25lb/Msf	89
	CO	TO	24.5 lb/hr, 0.3lb/Msf	107
Source S3 – Resinated Fines Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 11.9 lb/hr	4.4 52
Source S4 – Un-Resinated Fines Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 8.9 lb/hr	4.4 39
Source S5 – Finishing Line Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 1.1 lb/hr	4.4 5.0
Source S6 – Wet Strand Fines Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 8.9 lb/hr	4.4 39
Source S7 – Dry Fuel Bin Baghouse	PM/PM_{10} VOC	Baghouse Good operating procedure	0.005 gr/dscf 4.5 lb/hr	7.0 19.5
Source S8 – Blowline Baghouse	PM/PM_{10} VOC*	Baghouse *	0.005 gr/dscf *	2.2 *

* No formal limit proposed due to inherently small emission rate.
** Norbord is proposing to install (W)ESP/TO to comply with MACT requirements.

TABLE 5-3: RBLC SEARCH RESULTS FOR WOOD-FIRED EXTERNAL COMBUSTION SOURCES - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
NC-0002	ABI TIBI CORP.	ROARING RIVER, NC	3/25/1981	11/1/1983	BOILER, WOOD FIRED	11.008	120000	LB/H STEAM	PM/PM10	0.1	LB/MMBTU	VENTURI SCRUBBER & MULTICLONE
									CO	44.04	LB/HR	EQUIPMENT OPERATION
									NOX	35.23	LB/HR	EQUIPMENT OPERATION
WY-0003	AFTON GENERATING CO.	AFTON, WY	2/15/1983	4/17/1984	BOILER, WOOD & BARK WASTE	11.008	155.62	MMBTU/HR	PM/PM10	0.05	GR/DSCF AT 12% CO2	MULTICLONE & LOW ENERGY WET SCRUBBER
									VOC	0.09	LB/MMBTU	NONE
									CO	0.44	LB/MMBTU	COMBUSTION CONTROLS
									NOX	0.24	LB/MMBTU	COMBUSTION CONTROLS
AL-0047	ALABAMA RIVER PULP CO.	PURDUE HILL, AL	1/22/1990	5/18/1990	BOILER, RECOVERY, #2	30.002	5.5	MMLB/DAY BLS	PM/PM10	0.025	GR/DSCF AT 8% O2	ESP
AL-0047	ALABAMA RIVER PULP CO.	PURDUE HILL, AL	1/22/1990	5/18/1990	BOILER, WOOD WASTE FIRED	11.008	266	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	MULTICYCLONE & ESP
									CO	0.3	LB/MMBTU	
CA-0066	APPLIED POWER TECHNOLOGY	OROVILLE, CA	11/29/1983	4/17/1984	BOILER, 2	11.008	307.1	MMBTU/HR	PM/PM10	11.9	LB/HR	ESP & MULTICLONES
ND-0018	ARCHER DANIELS MIDLAND CO.	RANSOM, ND	7/9/1998	2/10/2003	BOILERS, 2, WELLONS	11.120	200	MMBtu/hr	PM	0.24	LB/MMBtu	ESP
									NOX	0.2	LB/MMBtu	NONE
									CO	0.63	LB/MMBtu	NONE
									VE	20%	OPACITY	ESP
CA-0172	AUBERRY ENERGY, INC.	CA	4/2/1985	2/19/1987	COGENERATION FAC., WOOD FIRED	11.008	18.4	T/H LUMBER	PM/PM10	0.01	GR/DSCF AT 12% CO2	MULTICYCLONE & ESP
ME-0013	BEAVER-LIVERMORE FALLS	LIVERMORE FALLS, ME	9/5/1991	3/24/1995	BOILER, WOOD WASTE	11.008	533.64	MMBTU/HR	PM/PM10	0.02	LB/MMBTU	MULTICLONE AND ESP
									CO	0.3	LB/MMBTU	GOOD COMBUSTION CONTROL
NY-0055	BORALEX CHATEAUGAY INC.	FRANKLIN, NY	12/19/1994	6/23/2004	RILEY STOKER WOOD BOILER	11.120	275	MMBtu/hr	VOC	27.5	LB/HR	NONE
									PM	10.45	LB/HR	ZURN MULTICLONE, ESP
									PM10	10.45	LB/HR	ZURN MULTICLONE, ESP
									NOX	63.25	LB/HR	NONE
									CO	96.25	LB/HR	NONE
GA-0020	BURLINGTON INDUSTRIES	RABUN GAP, GA	11/13/1986	2/19/1987	BOILER, WOOD WASTE FIRED	11.008	290	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	MULTICYCLONE & VENTURI SCRUBBER
SC-0005	CAROLINA FOREST INDUSTRIES, INC.	BENNETTSVILLE, SC	6/25/1981	4/2/1984	BOILER, BARK/WOODWASTE	11.008	172	MMBTU/HR	PM/PM10	0.25	LB/MMBTU	MECHANICAL COLLECTOR/ESP
									NOX	205	LB/HR	EQUIPMENT OPERATION AND DESIGN
ID-0001	CO-GEN., INC.	COEUR D'ALENE, ID	3/15/1983	11/1/1983	BOILER	11.008	6	MW	PM/PM10	0.034	LB/MMBTU	ESP
ID-0001.A	CO-GEN., INC.	COEUR D'ALENE, ID	3/15/1983	11/1/1983	BOILER, WOOD FIRED	11.008	104	MMBTU/HR	PM/PM10	3.95	LB/HR	MULTICLONE & BAGHOUSE
									CO	5.9	LB/HR	NONE
									NOX	19	LB/HR	NONE
MI-0049	COGENERATION MICHIGAN, INC.	CADILLAC, MI	9/15/1987	5/1/1990	BOILER, 2 EA	11.008	293	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	BAGHOUSE
									CO	0.3	LB/MMBTU	BOILER DESIGN
MI-0147	COGENERATION MICHIGAN, INC.	CADILLAC, MI	1/16/1990	5/1/1990	BOILER, 2 EA	11.008	293	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	MECHANICAL COLLECTOR, BAGHOUSE
									CO	0.35	LB/MMBTU	GOOD COMBUSTION PRACTICES
CA-0083	COLLINS PINE CO.	CHESTER, CA	8/3/1984	12/21/1984	BOILER #4	11.008	140000	LB/H STEAM	PM/PM10	9.7	LB/HR	MULTICLONE & ESP
									CO	84.8	LB/HR	BOILER DESIGN
									NOX	48.5	LB/HR	BOILER DESIGN
AL-0014.A	CONTAINER CORP. OF AMERICA	BREWTON, AL	5/27/1985	1/2/2001	BOILER, #2, WOODWASTE	11.008	351	MMBTU/HR	PM/PM10	0.3	GR/DSCF AT 50% EA	MULTICLONE, WET SCRUBBER
NC-0046	CRAVEN COUNTY WOOD-ENERGY PROJECT	NEW BERN, NC	1/24/1989	3/1/1989	BOILER, WOOD FIRED	11.008	666	MMBTU/HR	PM/PM10	0.041	LB/MMBTU	CYCLONE SEPARATOR, ESP
									CO	0.66	LB/MMBTU	AUTOMATIC COMBUSTION CONTROLS
VA-0052	D-SCAN FURNITURE, INC.	SOUTH BOSTON, VA	12/12/1986	4/20/1987	BOILER, WOODWASTE	11.008	5.02	MMBTU/HR	PM/PM10	0.3	LB/MMBTU	MULTICYCLONE
									CO	2.51	LB/HR	

TABLE 5-3: RBLC SEARCH RESULTS FOR WOOD-FIRED EXTERNAL COMBUSTION SOURCES - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
VT-0004	DECKER ENERGY INTERNATIONAL	EAST RYEGATE, VT	1/11/1988	6/1/1989	BOILER, WOOD FIRED	11.008	300	MMBTU/HR	PM/PM10	0.0007	GR/DSCF AT 12% CO2	MECHANICAL COLLECTOR, ESP
									CO	0.3	LB/MMBTU	
AR-0072	DEL-TIN FIBER LLC, MDF	UNION, AR	2/28/2003	10/28/2003	CALLIDUS CLOSED LOOP GASIFICATION SYSTEM (CLGS)	11.120	291	MMBtu/hr	VOC	21.2	LB/HR	VOCs DESTROYED BY CLGS
									NOX	87.2	LB/HR	LOW NOX COMBUSTORS AND SNCR
									CO	228.3	LB/HR	GOOD COMBUSTION PRACTICE
VA-0043	ERATH VENEER CORP. OF VA	ROCKY MOUNT, VA	12/30/1986	2/19/1987	BOILER, WOODWASTE FIRED	11.008	31.5	MMBTU/HR	PM/PM10	0.27	MMBTU/H	MULTICLONE (2)
									CO	0.89	LB/MMBTU	
ID-0005	EVERGREEN FOREST PRODUCTS	TAMARACK, ID	12/30/1982	11/1/1983	BOILER, WOOD FIRED	11.008	88	MMBTU/HR	PM/PM10	21.22	LB/HR	2 STAGED MULTICLONES
									CO	17.56	LB/H SEE NOTE	
CA-0124	FAIRHAVEN POWER CO.	FAIRHAVEN, CA	2/12/1985	2/28/1986	BOILER, WOOD FIRED	11.008	225.6	MMBTU/HR	PM/PM10	0.045	LB/MMBTU	ESP, MULTICYCLONE DUST COLLECTOR
									CO	0.35	LB/MMBTU	BOILER DEISGN W/40% EXCESS COMBUSTION AIR
									VOC	0.07	LB/MMBTU	BOILER DEISGN W/40% EXCESS COMBUSTION AIR
									NOX	0.2	LB/MMBTU	BOILER DEISGN W/40% EXCESS COMBUSTION AIR
CA-0265	GEOPRODUCTS/ZURN-NEPCO	HONEY LAKE, CA	3/11/1988	6/22/1988	BOILER, WOOD FIRING	11.008	305	LB/HR	PM/PM10	65.75	TPY	MULTICLONE, ESP
									CO	674.5	TPY	GOOD COMBUSTION PRACTICES

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LA-0041	GEORGIA-PACIFIC CORP.	LA	3/27/1981	11/1/1983	BOILER, WOOD FIRED	11.008	272	MMBTU/HR	PM/PM10	24.7	LB/HR	MULTICLONE, MECH COLLECTOR & WET SCRUB
									CO	25	LB/HR	F.G. O2 MONITOR, CONTROL OF AIR/FUEL RATIO
MS-0023	GEORGIA PACIFIC CORP. - GLOSTEE FACILITY	GLOSTEE, MS	4/11/1995	9/1/1995	BOILER, WOODWASTE	11.008	244	MMBtu/hr	NOX	0.3	LB/MMBTU	
									VOC	0.02	LB/MMBTU	NONE
									PM/PM10	0.1	LB/MMBtu	NONE
									CO	0.69	LB/MMBTU	NONE
GA-0010	GOLD KIST INC., GOLD KIST SOY PLANT	VALDOSTA, GA	12/9/1981	11/1/1983	BOILER, WELLON TYPE A	11.008	95	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	2 STAGE MECHANICAL COLLECTOR, FABRIC FILTER
MI-0151	GRAYLING GENERATING STATION	GRAYLING, MI	3/20/1990	10/21/1992	BOILER, WOOD FIRED	11.008	450	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	MULTICLONE, ESP
									CO	0.4	LB/MMBTU	DESIGN & OPERATING PRACTICES
AL-0116	GULF STATES PAPER CORPORATION	DEMOPOLIS, AL	12/10/1997	9/12/2002	BOILER, POWER	11.120	775	MMBtu/hr	NOX	0.3	LB/MMBTU	LOW NOX NATURAL GAS AND FUEL OIL BURNERS
									VOC	23.3	LB/HR	PROPER BOILER DESIGN AND OPERATION
AL-0122	GULF STATES PAPER CORP	MOUNDVILLE, AL	10/14/1998	4/16/1999	BOILER, WOOD FIRED	11.008	98	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	MULTICYCLONE AND ESP
									CO	0.5	LB/MMBTU	
									NOX	0.3	LB/MMBTU	
CA-0070	HAYFORK COGENERATION PROJECT	CA	12/14/1983	5/2/1984	BOILER, WOOD WASTE	11.008	236	MMBTU/HR	PM/PM10	0.04	LB/MMBTU	MULTICLONE, ESP
									CO	0.35	LB/MMBTU	COMBUSTION MODIFICATION
									NOX	0.15	LB/MMBTU	DESIGN
									VOC	0.07	LB/MMBTU	DESIGN
MI-0139	HILLMAN LIMITED PARTNERS	HILLMAN, MI	12/5/1989	10/21/1992	BOILER	11.008	300	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	MECHANICAL COLLECTOR, ESP
									CO	0.35	LB/MMBTU	BOILER DESIGN & GOOD COMBUSTION PRACTICES
CA-0040	HUDSON LUMBER CO.	ANDERSON, CA	10/5/1981	11/1/1983	BOILER	11.008	90000	LB/HR STEAM	PM/PM10	0.035	GR/DSCF	MULTICLONE & VENTURI SCRUBBER
									CO	2	LB/T FUEL	COMBUSTION PARAMETER CONTROL
MO-0046	HUEBERT FIBERBOARD	BOONVILLE, MO	3/9/1995	10/6/1997	INSTALLATION OF ONE WOOD-FIRED PROCESS BOILER	11.008	100	TPY	PM/PM10	7.7	TPY (DE MINIMIS)	TWO SINGLE CYCLONES
CA-0071	IMOTEK, INC.	SACRAMENTO, CA	9/1/1983	6/1/1984	BOILER	11.008	162.2	MMBTU/HR	PM/PM10	0.02	GR/DSCF	BAGHOUSE
									NOX	130	PPMV @ 3% O2	STAGED COMBUSTION, CEM
AR-0010	INTERNATIONAL PAPER CO.	GURDON, AR	3/25/1983	11/1/1983	BOILER, WOOD WASTE, #1 & #2	11.008	999999	MMBTU/HR	PM/PM10	25	LB/HR, EA	SCRUBBER
									CO	200	LB/HR, EA	GOOD COMBUSTION PRACTICES
NC-0092	INTERNATIONAL PAPER COMPANY	COLUMBUS, NC	5/10/2001	5/17/2004	BOILER, POWER, WOODWASTE-FIRED	12.120	600	MMBTU/HR	PM/PM10	0.25	LB/MMBTU	MULTICLONE AND VENTURI TYPE WET SCRUBBER
									NOX	0.35	LB/MMBTU	GOOD COMBUSTION PRACTICE
									CO	0.5	LB/MMBTU	GOOD COMBUSTION PRACTICE
									VOC	0.213	LB/MMBTU	GOOD COMBUSTION PRACTICE
PA-0145	INTERNATIONAL PAPER COMPANY	ERIE, PA	12/21/1994	12/18/2001	BOILER, BARK AND WOODWASTE	11.120	326	MMBtu/hr	NOX	0.54	LB/MMBtu	NONE
ME-0003	J.M. HUBER CORP.	EASTON, ME	8/25/1982	11/1/1983	DRYER, 2	30.999	240	T/D	PM/PM10	2.48	LB/T WAFER BD	HIGH EFFICIENCY CYCLONES
ME-0003	J.M. HUBER CORP.	EASTON, ME	8/25/1982	11/1/1983	BOILER, WOOD	11.008	84	MMBTU/H	PM/PM10	0.12	LB/MMBTU	MULTICLONES
NY-0055	KES CHATEAUGAY PROJECT	CHATEAUGAY, NY	12/19/1994	3/31/1995	RILEY STOKER WOOD BOILER EP #00001	11.008	275	MMBTU/HR	PM/PM10	0.038	LB/MMBTU	ZURN MULTICLONE, ESP
									CO	0.35	LB/MMBTU	NO CONTROLS
NY-0055	KES CHATEAUGAY PROJECT	CHATEAUGAY, NY	12/19/1994	3/31/1995	AUXILIARY BOILER EP #00002	11.006	5	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	NO CONTROLS
									CO	0.036	LB/MMBTU	NO CONTROLS
CA-0261	LOUISIANA PACIFIC CORP.	CA	11/6/1987	6/2/1988	GENERATOR, STEAM, WOOD FIRED	11.008	127	MMBTU/HR	PM/PM10	2.8	LB/HR	MULTICLONE & ESP
									VOC	16	LB/HR	COMBUSTION CONTROLS
									NOX	23	LB/HR	COMBUSTION CONTROLS

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									CO	22	LB/HR	COMBUSTION CONTROLS
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	1/27/1982	11/1/1983	BOILER, WOOD, #1	11.008	24.6	MMBTU/HR	PM/PM10	0.15	LB/MMBTU	ESP
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	1/27/1982	11/1/1983	BOILER, WOOD, #2	11.008	24.6	MMBTU/HR	PM/PM10	0.15	LB/MMBTU	ESP
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	1/27/1982	11/1/1983	DRYER, WOOD FIRED, #1	30.999	36.4	MMBTU/HR	PM/PM10	1.84	LB/T WAFER BD	CYCLONE
ME-0004	LOUISIANA-PACIFIC CORP.	NEW LIMERICK, ME	1/27/1982	11/1/1983	DRYER, WOOD FIRED, #2	30.999	36.4	MMBTU/HR	PM/PM10	1.84	LB/T WAFER BD	CYCLONE
VA-0268	MARTINSVILLE THERMAL, LLC	HENRY, VA	2/15/2002	9/5/2003	BOILER, STEAM, WOOD	12.120	120	MMBTU/HR	PM/PM10	78.8	T/YR	GOOD COMBUSTION PRACTICES AND CEM
									NOX	210.4	T/YR	GOOD COMBUSTION PRACTICES AND CEM
									CO	231.3	T/YR	GOOD COMBUSTION PRACTICES AND CEM
									VOC	94.6	T/YR	GOOD COMBUSTION PRACTICES AND CEM
VT-0002	MCNEIL GENERATING STATION	BURLINGTON, VT	5/1/1980	2/28/1990	FURNACE, WOOD FIRED	11.008	670	MMBTU/HR	PM/PM10	0.007	LB/MMBTU	MECHANICAL DUST COLLECTOR & ESP (80%-MEC COLLECT. & 99.5%-ESP)
AL-0039	MEAD COATED BOARD	COTTONTON, AL	10/1/1988	6/1/1989	BOILER, RECOVERY, #2	30.002	1500	T ADP/D	PM/PM10	0.044	GR/DSCF AT 8% O2	ESP & INCINERATION
									CO	0.4	LB/MMBTU	
AL-0099	MEAD CONTAINERBOARD	STEVENSON, AL	1/15/1997	5/31/1997	POWER BOILER	11.008	620	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	MULTICYCLONE AND ELECTROSTATIC PRECIPITATOR (ESP)
									CO	0.4	LB/MMBTU	COMBUSTION CONTROL
									NOX	0.25	LB/MMBTU	COMBUSTION CONTROL
AL-0032	MEAD PAPERBOARD	STEVENSON, AL	8/7/1986	9/30/1988	BOILER, WOODWASTE	11.008	430	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	MULTICLONE & VENTURI SCRUBBER
									CO	0.6	LB/MMBTU	
KY-0085	MEADWESTVACO KENTUCKY, INC	BALLARD, KY	2/27/2002	5/13/2004	BOILER, BARK	11.120	631	MMBtu/hr	PM	0.1	LB/MMBtu	ESP
									VE	20%	OPACITY	ESP
									NOX	0.4	LB/MMBtu	NONE
VA-0183	MULTITRADE LIMITED PARTNERSHIP	VA	2/21/1992	5/7/1997	BOILER, SPREADER STOKER, 3	11.008	373.7	MMBTU/HR EACH	PM/PM10	0.02	LB/MMBTU	ESP, MULTICLONE
									CO	0.35	LB/MMBTU	BOILER DESIGN
VA-0183	MULTITRADE LIMITED PARTNERSHIP	VA	2/21/1992	5/7/1997	BOILERS, SPREADER STOKER, 3 COMBINED	11.008	999999	MMBTU/HR	PM/PM10	96.4	TPY	
									CO	1687.3	TPY	
PA-0093	NEWMAN PAPER CO.	PHILADELPHIA, PA	4/24/1992	3/24/1995	BOILER (WOOD)	11.008	129	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	BAGHOUSE
									NOX	0.3	LB/MMBTU	LOW NOX BURNERS
									CO	0.3	LB/MMBTU	GOOD COMBUSTION PRACTICES
MS-0009	NEWSPRINT SOUTH, INC.	GRENADA, MS	3/10/1987	2/29/1988	BOILER, BARK	11.008	151.12	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	MULTICLONE & SCRUBBER
									NOX	0.3	LB/MMBTU	LOW EXCESS AIR
									CO	72	LB/HR	COMBUSTION DESIGN
WA-0001	PANORAMA ENERCORP, INC	KETTLE FALLS, WA	9/22/1981	11/1/1983	BOILER	11.008	37	MW	PM/PM10	0.007	GR/DSCF 12% CO2	ESP
									CO	107.3	LB/HR	
NH-0004	PINETREE POWER - TAMWORTH INC.	TAMWORTH, NH	11/15/1990	7/19/1994	BOILER, WOOD-FIRED SPREADER STOKER	11.008	404	MMBTU/HR	PM/PM10	0.025	LB/MMBTU	3-FIELD ESP
									CO	0.5	LB/MMBTU	
NH-0003	PINETREE POWER INC.	BETHLEHEM, NH	3/27/1990	7/19/1994	BOILER, WOOD-FIRED SPREADER STOKER	11.008	289	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	3-FIELD ESP
									CO	0.5	LB/MMBTU	
MT-0007	PLUM CREEK MFG - EVERGREEN FACILITY	KALISPELL, MT	2/15/1997	3/16/1998	RILEY STOKER BOILER	11.008	225	MMBtu/hr	NOX	104	LB/HOUR	

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									CO	506	LB/HOUR	GOOD COMBUSTION
FL-0022	PORT ST. JOE	PORT ST. JOE, FL	2/18/1982	1/25/1984	BOILER, OIL FIRED	11.006	756	MMBTU/HR	PM/PM10	75.5999	LB/HR	MULTICLONE, WET SCRUBBER
									CO	25.2	LB/HR	EQUIPMENT OPERATION
FL-0022	PORT ST. JOE	PORT ST. JOE, FL	2/18/1982	1/25/1984	BOILER, BARK	11.008	882	MMBTU/HR	PM/PM10	88.2099	LB/HR	MULTICLONE, WET SCRUBBER
									CO	207.55	LB/HR	EQUIPMENT OPERATION
AR-0073	POTLATCH CORPORATION	NEVADA, AR	9/8/1995	11/18/2003	WOOD-FIRED BOILER	12.120	159.29	MMBTU/HR	PM/PM10	15.9	LB/HR	ESP WITH MULTICLONE
									CO	215.1	LB/HR	PROPER DESIGN AND OPERATION
									NOX	39.9	LB/HR	PROPER DESIGN AND OPERATION
MN-0033	POTLATCH CORPORATION	COOK, MN	6/24/1998	11/11/1999	HEATER PROCESS, THERMAL OIL	11.008	140	MMBtu/hr	NOX	0.3	LB/MMBTU	WATER VAPOR INJECTION AND STAGED COMBUSTION
NY-0007	PROCTOR & GAMBLE	STATEN ISLAND, NY	2/25/1982	4/1/1983	BOILER	11.008	360	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	MULTICLONE & VENTURI SCRUBBER
									CO	0.22	LB/MMBTU	PROPER COMBUSTION AIR
VT-0004	RYEGATE WOOD ENERGY COMPANY	EAST RYGATE, VT	7/11/1990	3/24/1995	BOILER, WOOD FIRED	11.008	300	MMBTU/HR	PM/PM10	0.0007	GR/DSCF AT 12% CO2	MECH. COLLECTORS IN SERIES W/ AN ESP
									CO	0.3	LB/MMBTU	ESP, MULTICYCLONE
ME-2001	S.D. WARREN CO.	SOMERSET, ME	11/27/2001	12/12/2002	BOILER, WOODWASTE	11.120	1300	MMBtu/hr	PM	39	LB/HR	MECHANICAL DUST COLLECTOR, ESP
									NOX	260	LB/HR	SNCR
									CO	520	LB/HR	GOOD BOILER DESIGN AND COMBUSTION PRACTICES
									VOC	9.1	LB/HR	GOOD BOILER DESIGN AND COMBUSTION PRACTICES
WA-0276	SCOTT PAPER COMPANY	EVERETT, WA	7/1/1993	2/17/1999	BOILER, WOODWASTE-FIRED	11.008	718	MMBTU/HR	PM/PM10	0.0084	GR/DSCF @ 7% O2	BAGHOUSE
									CO	511	PPM @ 7% O2	COMBUSTION CONTROL, BOILER DESIGN
WA-0276	SCOTT PAPER COMPANY	EVERETT, WA	7/1/1993	2/17/1999	BOILER, WOODWASTE-FIRED	11.008	718	MMBTU/HR	PM/PM10	0.011	GR/DSCF @ 7% O2	BAGHOUSE
CA-0930	SIERRA PACIFIC INDUSTRIES	PLUMAS, CA	5/13/1998	12/4/2002	BOILER, WOOD-FIRED	12.120	245.3	MMBTU/HR	NOX	56.4	LB/HR	SNCR
									PM/PM10	8.6	LB/HR	MULTICLONES AND ESP
									CO	282	LB/HR	HIGH PRESSURE OVERFIRE AIR
									VOC	12.3	LB/HR	HIGH PRESSURE OVERFIRE AIR
WA-0298	SIERRA PACIFIC INDUSTRIES	GRAYS HARBOR, WA	10/17/2002	11/17/2003	HOG FUEL BOILER, COGENERATION	11.120	310	MMBtu/hr	CO	0.35	LB/MMBtu	GOOD COMBUSTION
									NOX	0.15	LB/MMBtu	SNCR, BOILER DESIGN
									PM	0.02	LB/MMBtu	ESP
FL-0004	ST REGIS PAPER CO.	CANTONMENT, FL	6/26/1981	1/25/1984	BOILER, BARK FIRED, #4	11.008	666	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	CYCLONE, VENTURI & WET SCRUBBER
VA-0100	STUART FLOORING CORP.	VA	1/25/1988	3/31/1988	BOILER, WOODWASTE	11.008	14.55	MMBTU/HR	PM/PM10	0.3	LB/MMBTU	MULTICYCLONE
VA-0132	TAYLOR-RAMSEY CORP.	VA	5/16/1988	10/15/1988	BOILER/GENERATOR	11.008	750	LB/YR	PM/PM10	0.2	LB/MMBTU	PERMIT LIMITS
									CO	0.48	LB/MMBTU	PERMIT LIMITS
TX-0145	TEXAS ELECTRIC COOP.,INC.	TX	2/7/1984	4/17/1984	BOILER	11.008	35	MMBTU/HR	PM/PM10	0.3	LB/MMBTU	CYCLONES
									CO	1.1	LB/MMBTU	
CA-0194	ULTRAPOWER - PLACER, INC.	CA	1/2/1987	9/11/1987	BOILER	11.008	356.8	MMBTU/HR	PM/PM10	0.02	GR/DSCF AT 12% O2	ESP
CA-0077	ULTRASYSTEMS	BLUE LAKE, CA	1/12/1984	5/2/1984	BOILER, WOOD WASTE	11.008	162	MMBTU/HR	PM/PM10	0.045	LB/MMBTU	MULTICLONE, GRANULAR BED ELECTO-SCRUBBER
CA-0118	ULTRASYSTEMS INC.	CHINESE CAMP, CA	8/9/1985	2/28/1986	BOILER, FLUID BED, WOOD FIRED	11.008	370	MMBTU/HR	PM/PM10	0.047	LB/MMBTU	MULTICLONE, ESP
									CO	0.15	LB/MMBTU	FLUIDIZED BED COMBUSTION
CA-0039	ULTRASYSTEMS INC.	BURNEY, CA	10/6/1982	4/1/1983	BOILER	11.008	150000	LB/HR STEAM	PM/PM10	0.035	GR/DSCF	MULTICLONE & VENTURI SCRUBBER
									CO	126	T/YR	COMBUSTION PARAMETER CONTROL

TABLE 5-3: RBLC SEARCH RESULTS FOR WOOD-FIRED EXTERNAL COMBUSTION SOURCES - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
									VOC	55	T/YR	COMBUSTION PARAMETER CONTROL
									NOX	139	T/YR	COMBUSTION PARAMETER CONTROL
AL-0107	WELLBORN CABINET INC	ASHLAND, AL	2/3/1998	4/24/1998	2-29.5 MMBTU/HR WOOD GASIFICATION BOILER	11.008	29.5	MMBtu/hr	NOX	13.57	LB/HR	TRIM,STAGED COMBUSTION, STEAM INJECTION,AND OVERFIRE AIR.
									CO	23.6	LB/HR	TRIM,STAGED COMBUSTION, STEAM INJECTION, AND OVERFIRE AIR.
LA-0126	WEST FRASER (SOUTH), INC.	WINN PARISH, LA	4/24/2002	12/19/2003	KIPPER BOILERS (2), WOOD WASTE	13.1200	58.3 EACH	MMBTU/HR	CO	105.5	LB/HR EACH	NO CONTROLS
					MCBURNEY BOILER, WOOD WASTE	12.120	154.2	MMBTU/HR	CO	279.1	LB/HR	NO CONTROLS
KY-0033	WESTVACO CORP. - FINE PAPERS DIV.	WICKLIFFE, KY	3/30/1978	2/13/1984	BOILER, BARK	11.008	463	MMBTU/HR	PM/PM10	0.1	LB/MMBTU	ESP, MULTIPLE CYCLONE
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	10/28/1994	5/19/1998	BOILER, WOOD-FIRED	11.008	91	MMBTU/HR	PM/PM10	0.15	LB/MMBTU	VENTURI SCRUBBER (ZURN INDUSTRIES MODEL MTSA-35-11.5 CVTA-STD)
									CO	1.4	LB/MMBTU	
						11.008	91	MMBtu/hr	NOX	0.23	LB/MMBtu	
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	10/28/1994	5/19/1998	JET VENEER DRYERS (2), GAS-FIRED & STEAM-HEATED	30.003	0		PM/PM10	9.4	TPY	REGENERATIVE CATALYTIC OXIDIZER (RCO) (SALEM ENGLEHARD MODEL RCO1124-2V)
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	10/28/1994	5/19/1998	LUMBER DRY KILNS (2), HIGH TEMP.	30.003	110000	BOARD FOOT/KILN	PM/PM10	0.9	LB/HR	
AL-0079	WEYERHAEUSER CO.	MILLPORT, AL	10/28/1994	5/19/1998	DRYER, RADIO FREQUENCY	30.003	0		PM/PM10	0.2	TPY	
MI-0311	WEYERHAEUSER COMPANY - OSB	CRAWFORD, MI	11/14/1995	6/3/2003	WOOD BURNER, HOGGED FUEL/COEN DUST BURNER	11.120	260	MMBtu/hr	PM	0.1	LB/MMBtu	MULTICLONE, ESP, RTO
MS-0026	WEYERHAEUSER COMPANY	BRUCE, MS	5/9/1995	11/27/1995	BOILER, WOODWASTE	11.008	90	MMBtu/hr	NOX	0.23	LB/MMBTU	COMBUSTION CONTROLS
									CO	0.4	LB/MMBTU	COMBUSTION CONTROLS
ME-0026	WHEELABRATOR SHERMAN ENERGY COMPANY	PENOBSCOT, ME	4/9/1999	12/12/2002	BOILER, BIOMASS	11.120	315	MMBtu/hr	PM	11.4	LB/HR	ESP, CYCLONE
									NOX	0.25	LB/MMBtu	GOOD COMBUSTION PRACTICE
									CO	0.45	LB/MMBtu	GODD COMBUSTION PRACTICE
									VOC	9.45	LB/HR	GOOD COMBUSTION PRACTICE
KY-0001	WILLAMETTE INDUSTRIES, INC.	HAWESVILLE, KY	6/2/1980	2/13/1984	BOILER, WOOD WASTE	11.008	400	MMBTU/HR	PM/PM10	0.04	GR/DSCF	MULTICLONES, VENTURI SCRUBBER
KY-0039	WILLAMETTE INDUSTRIES, INC.	HAWESVILLE, KY	4/30/1980	2/13/1984	BOILER, WOOD WASTE	11.008	400	MMBTU/HR	PM/PM10	0.04	GR/DSCF	MULTICLONE, VENTURI
SC-0045	WILLAMETTE INDUSTRIES	MARLBORO, SC	4/17/1996	9/17/2002	BOILER WOOWASTE/BARK	11.120	470	MMBtu/hr	PM	23.5	LB/HR	ESP
									CO	141	LB/HR	GOOD COMBUSTION CONTROL
									VOC	47	LB/HR	GOOD COMBUSTION CONTROL
									NOX	141	LB/HR	GOOD COMBUSTION CONTROL
VA-0092	WOOD PRESERVERS, INC.	RICHMOND, VA	10/21/1987	12/23/1987	BOILER, WOOD WASTE FIRED	11.008	48	MMBTU/HR	PM/PM10	0.2024	LB/MMBTU	MULTICYCLONE (2 IN SERIES)
									CO	21.6	LB/HR	THROUGHPUT LIMITS
VA-0166	WOOD PRESERVERS, INC.	VA	10/12/1989	4/30/1990	BOILER	11.008	48.6	MMBTU/HR	PM/PM10	0.89	LB/HR	MULTICYCLONE (2)
									CO	21.6	LB/HR	THROUGHPUT LIMITS
VA-0166	WOOD PRESERVERS, INC.	VA	10/12/1989	4/30/1990	BOILER	11.008	48.6	MMBTU/HR	PM/PM10	5.95	LB/HR	MULTICYCLONE (2)
									CO	21.6	LB/HR	
NC-0066	CORN PRODUCTS INTERNATIONAL	WINSTON-SALEM, NC	7/15/1997	2/20/2001	WOOD, WOOD COMBUSTION, WOOD GASIFICATION BOILER	11.008	324.5	MMBTU/HR	PM/PM10	0.03	LB/MMBTU	MULTICYCLONE FOLLOWED BY AN ESP.
									CO	0.3	LB/MMBTU	BOILER DESIGNED WITH LOW EXCESS AIR AND STAGED COMBUSTION.

Notes: Cogeneration facilities not included due to gross differences in operation.

TABLE 5-4: RBLC SEARCH RESULTS FOR ROTARY DRYER - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
VA-0170	LOUISIANA-PACIFIC CORP.	VA	11/2/1989	4/30/1990	DRYER, WAFER	30.005	19.4	T/H, WET	PM	39.3	TPY	CYCLONE, 2
									PM10	16.3	TPY	CYCLONE, 2
									VOC	85.7	TPY	
									SO2	1.3	TPY	
									NOX	23.5	TPY	
									CO	33.6	TPY	
AL-0067	LOUISIANA PACIFIC CORP.	HANCEVILLE, AL	8/8/1991	3/24/1995	DRYER, ROTARY DRUM, WOOD WAFER, #1 & 2	30.005	31000	LB DRY WAFERS/HR	PM	0.57	LB/TON DRY WAFERS AN	REGENERATIVE THERMAL OXIDIZERS (RTO)
									NOX	0.95	LB/TON DRY WAFERS AN	DRYER DESIGN
									CO	0.9	LB/TON DRY WAFERS AN	REGENERATIVE THERMAL OXIDIZERS (RTO)
									VOC	4.48	LB/TON DRY WAFERS AN	DRYER DESIGN
AL-0067	LOUISIANA PACIFIC CORP.	HANCEVILLE, AL	8/8/1991	3/24/1995	DRYER, ROTARY DRUM, WOOD WAFER, #3, 4, & 5	30.005	46500	LB DRY WAFERS/HR	PM	0.5	LB/TON DRY WAFERS AN	REGENERATIVE THERMAL OXIDIZERS (RTO)
									NOX	0.82	LB/TON DRY WAFERS AN	DRYER DESIGN
									CO	1.33	LB/TON DRY WAFERS AN	REGENERATIVE THERMAL OXIDIZERS (RTO)
									VOC	4.88	LB/TON DRY WAFERS AN	DRYER DESIGN
WI-0079	LOUISIANA PACIFIC CORP.	HAYWARD, WI	3/22/1994	8/9/1994	DRYER, WOOD	30.005	21.58	MMBTU/HR	PM	8.42	LB/HR	EFB, RTO
									CO	15.1	LB/HR	GOOD COMBUSTION, RTO
									VOC	3.67	LB/HR	WOOD SPECIE, RTO
									NOX	18.38	LB/HR	GOOD COMBUSTION, LOW NOX TECHNOLOGY IN RTO
MN-0027	POTLATCH CORPORATION - WOOD PRODUCTS, MN DIV.	COOK, MN	1/17/1995	12/30/1996	WOOD-FIRED ROTARY WOOD FLAKE DRYERS	30.005	30	TONS FLAKES/HR	NOX	45.8	LB/HR	GOOD COMBUSTION PRACTICES, INCLUDING PROPER MAINTENANCE AND LIMITING EXCESS AIR.
MI-0240	LOUISIANA PACIFIC CORP.	MI	3/1/1996	5/31/1996	WAFER DRYERS	30.005	0		CO	285	PPH	COMBUSTION
									NO2	45.8	PPH	COMBUSTION
									VOC	31.6	PPH	COMBUSTION
									PM10	0.015	GR/DSCF	WET ESP/REGENERATIVE THERMAL OXIDIZER (RTO)
CA-0809	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	4/1/1998	4/1/1999	REGENERATIVE THERMAL OXIDIZER	30.005	24	MMBTU/HR	PM10	0.0015	GR/DSCF	DRYER WHICHIN TURN USES EMISSIONS FROM PRESS AND BOARD COOLER
CA-0865	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	4/1/1998	6/17/1999	OXIDIZER, THERMAL, REGENERATIVE	30.005	24	MMBTU/HR	PM10	0.0015	GR/DSCF	7 CANISTER RT0. INTAKE AIR FROM FIBER DRYER WHICH IN TURN USES EMISSIONS FROM PRESS AND BOARD COOLER
AR-0023	GEORGIA-PACIFIC ORIENTED STRANDBOARD FACILITY	FORDYCE, AR	6/8/1999	8/24/2000	DRYER, 5, EACH	30.005	475	MMSF/YR	PM10	14.89	LB/HR	RTO WITH MULTICLONES, GOOD COMBUSTION
									CO	6.72	LB/HR	RTO WITH MULTICLONES, GOOD COMBUSTION
									VOC	25.25	LB/HR	RTO WITH MULTICLONES, GOOD COMBUSTION
									NOX	14.66	LB/HR	LOW NOX BURNERS, FUEL ENHANCEMENT
NC-0007.A	GEORGIA-PACIFIC CORP.	DUDLEY, NC	6/1/1982	11/1/1983	DRYER, SANDERDUST FUEL	30.005	10000	LB/HR	PM	30	LB/HR SEE NOTE	CYCLONES, ESP
									VE	0		CYCLONES, ESP
									ORGANIC CONDENSABLES	0		CYCLONES, ESP
NC-0007.A	GEORGIA-PACIFIC CORP.	DUDLEY, NC	6/1/1982	11/1/1983	DRYER, ROTARY WOODFLAKE, GREEN	30.005	80000	LB/HR	PM	30	LB/HR SEE NOTE	CYCLONES, ESP

TABLE 5-4: RBLC SEARCH RESULTS FOR ROTARY DRYER - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
									VE	0		CYCLONES, ESP
									ORGANIC CONDENSABLES	0		CYCLONES, ESP
CA-0052.A	LOUISIANA PACIFIC CORP.	CA	5/10/1985	1/2/2001	DRYER, WOOD FIBER	30.005	611248	LB/H WOOD FIBER	PM	0.032	GR/SCF	HIGH EFF. CYCLONE
VA-0057	LOUISIANA-PACIFIC CORP.	DUNGANNON, VA	2/17/1987	5/5/1987	DRYER, WAFER	30.005	40	MMBTU/HR	PM SO2 VOC NOX	9 0.4 13 4.5	LB/HR LB/HR LB/HR LB/HR	CYCLONE, ELECTRIFIED FILTER BED
									CO	12	LB/HR	
MN-0012	POTLATCH CORP.	BEMIDJI, MN	5/23/1989	9/29/1989	DRYER, WOOD GASIFIER	30.005	156250	T/YR FINISHED PRODUC	PM	19.3	LB/HR, TOTAL	CYCLONE/ELECTRIFIED FILTER BED
									PM10	17.4	LB/HR, TOTAL	CYCLONE/ELECTRIFIED FILTER BED
									NOX	2.58	LB/T FUEL	LOW DRYER INLET TEMP, COMBUSTION CONTROL
									VOC	0.5	LB/TON FINISHED PRODUCT	LOW DRYER INLET TEMP, COMBUSTION CONTROL
									CO	2	LB/TON FINISHED PRODUCT	LOW DRYER INLET TEMP, COMBUSTION CONTROL
AR-0029	TEMPLE INLAND FOREST PRODUCTS CORP.	HOPE, AR	11/19/1999	8/30/2000	DRYER, PROCESS, 3	30.005	58	MMBTU/H EACH	PM	55.4	LB/HR	MULTICYCLONE
									VOC	88.8	LB/HR	
									NOX	55.9	LB/HR	GOOD COMBUSTION
									CO	56.5	LB/HR	GOOD COMBUSTION
AR-0029	TEMPLE INLAND FOREST PRODUCTS CORP.	HOPE, AR	11/19/1999	8/30/2000	DRYER, PRE	30.005	39	MMBTU/HR	PM	2.3	LB/HR	CYCLONE, WET ESP, RTO IN SERIES
									VOC	7.9	LB/HR	RTO
									NOX	44.5	LB/HR	LOW NOX BURNERS
									CO	38.2	LB/HR	GOOD COMBUSTION
MT-0016	PLUM CREEK MANUFACTURING, L.P.	COLUMBIA FALLS, MT	12/23/1999	3/5/2001	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD DRYER	30.005	46500	TPY	NOX	43.4	LB/HR	LOW NOX BURNER - RANKED THIRD BY EFFECTIVENESS. NO LIMIT ON EMISSIONS, INVENTORIED AT 43.4 LB/H
									VOC	76.1	LB/HR	NO ADDITIONAL CONTROL EQUIPMENT. NO EXISTING CONTROL (NEW UNIT)
									PM10	18	LB/HR	WET ESP. NO COST INFORMATION, BEST CONTROL.
									CO	722	LB/HR	NO ADDITIONAL CONTROLS. NO LIMIT, INVENTORIED AT 722 LB/H
FL-0211	GEORGIA PACIFIC - HOSFORD OSB PLANT	HOSFORD, FL	10/13/2000	1/9/2001	FIVE FLAKES DRYERS WITH TWO RTOS.	30.005	550216	TONS	PM10	33.8	LB/HR	MULTICYCLONES ON EACH DRYER, TWO REGENERATIVE THERMAL OXYDIZER FOR FIVE DRYERS.
									NOX	60	LB/HR	LOW NOX BURNERS
									CO	33.6	LB/HR	REGENERATIVE THERMAL OXYDIZERS
									VOC	63.1	LB/HR	REGENERATIVE THERMAL OXYDIZERS
									VE	5	% OPACITY	MULTICLONES & RTOS
MN-0042	POTLATCH CORPORATION	GRAND RAPIDS, MN	12/4/2000	2/19/2001	WOOD WAFER DRYER, TRIPLE PASS ROTARY DRUM	30.005	33000	LB/HR	PM	6	LB/HR	WET ESP (ELECTROSTATIC PRECIPITATOR)
								LB/HR	PM10	6	LB/HR	WET ESP (ELECTROSTATIC PRECIPITATOR)
								LB/HR	CO	5.88	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
								LB/HR	VOC	8	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
								LB/HR	NOX	8.25	LB/HR	

TABLE 5-4: RBLC SEARCH RESULTS FOR ROTARY DRYER - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
AR-0059	GEORGIA-PACIFIC CALHOUN OSB PLANT	CALHOUN, AR	1/7/2003	6/20/2003	ROTARY DRUM DRYERS (5) W/2 RTOS	30.005	600	MMSF/YR	PM10	18.82	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER) W/MULTICLONES
									CO	52	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
									VOC	31.9	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
									NOX	14.66	LB/HR	LOW NOX BURNER
MI-0353	WEYERHAEUSER	CRAWFORD, MI	6/11/2002	12/12/2002	FOUR DRYERS (AND BURNERS)	30.005	108000	LB/HR	PM10	29.8	LB/HR	ONE RTO (REGENRATIVE THERMAL OXIDIZER)
									CO	147.3	LB/HR	ONE RTO (REGENRATIVE THERMAL OXIDIZER)
									VOC	18.6	LB/HR	ONE RTO (REGENRATIVE THERMAL OXIDIZER)
									NOX	23.15	LB/HR	
SC-0074	KRONOTEX	BARNWELL, SC	4/8/2002	1/13/2003	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD DRYER	30.005	578861	ODT/YR	PM10	1.4	LB/HR	WET SCRUBBER FOLLOWED BY AN RTO
									CO	NO LIMIT	LB/HR	
									VOC	18.16	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
									NOX	66.85	LB/HR	PLC, LNB (LOW NOX BURNERS), FGR (FLUE GAS RECIRCULATION)
AR-0039	DEL TIN FIBER LLC	UNION, AR	5/9/2001	12/20/2002	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD	30.005						
LA-0139	LOUISIANA-PACIFIC CORPORATION URANIA PLANT	LASALLE PARISH, LA	12/7/2000	3/2/2004	WOOD PRODUCTS, MEDIUM DENSITY FIBERBOARD FLASH TUBE DRYERS (2)	30.005	15000	LB/HR (EA)	PM10	14.5	LB/HR	RTOs (REGENERATIVE THERMAL OXIDIZER)
									CO	9.84	LB/HR	GOOD COMBUSTION PRACTICES
									VOC	5.27	LB/HR	RTOs (REGENERATIVE THERMAL OXIDIZER)
									NOX	32.33	LB/HR	GOOD COMBUSTION PRACTICES
NC-0081	HOMANIT USA, INC	MONTGOMERY, NC	12/29/1999	3/12/2004	HIGH DENSITY FIBERBOARD FLASH TUBE DRYER (EMISSIONS COMBINATION OF PRESS AND COOLERS)	30.005	302000	SCFM	PM	12.8	LB/HR	MULTICLONE WITH RTO (REGENERATIVE THERMAL OXIDIZER)
									PM10	11	LB/HR	MULTICLONE WITH RTO (REGENERATIVE THERMAL OXIDIZER)
									VE	20%	OPACITY	MULTICLONE WITH RTO (REGENERATIVE THERMAL OXIDIZER)
									CO	52	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
									VOC	12.6	LB/HR	RTO (REGENERATIVE THERMAL OXIDIZER)
									NOX	171.5	LB/HR	SNCR (SELECTIVE NON CATALYTIC REDUCTION) AT 60% REDUCTION: $1512/TON
TX-0307 (draft)	LOUISIANA-PACIFIC CARTHAGE OSB MILL	PANOLA, TX	12/16/1998	3/2/2004	DRYERS (2) EAST AND WEST	30.005	597.23	MSF/YR	PM10	13.54	LB/HR	RTOs (REGENERATIVE THERMAL OXIDIZER)
									VOC	14.77	LB/HR	RTOs (REGENERATIVE THERMAL OXIDIZER)
									NOX	30.19	LB/HR	
									CO	275.66	LB/HR	RTOs (REGENERATIVE THERMAL OXIDIZER)
									VE	10%	OPACITY	FABRIC FILTER
GA-0076	TEMPLE-INLAND	MCDUFFIE, GA	9/3/1997	4/21/2003	PARTICLE BOARD DRYERS (4)	30.005			PM	3.45	LB/HR	MULTICLONE WITH FUTURE RTO
									VOC	1.71	LB/HR	MULTICLONE WTH FUTURE RTO

TABLE 5-6: RBLC SEARCH RESULTS FOR PRESS - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
VA-0057	LOUISIANA-PACIFIC CORP.	DUNGANNON, VA	2/17/1987	5/5/1987	PRESS, 2 VENTS	30.005	9.29	T/H	VOC	11.9	LB/HR	LIMIT INCLUDES FORMALDEHYDE & PHENOL EMISSIONS RESIN USAGE LIMIT
MN-0012	POTLATCH CORP.	BEMIDJI, MN	5/23/1989	9/29/1989	PRESS	30.005	156250	T/YR FINISHED PRODUCT	VOC	0.61	LB/TON FINISHED PRODUCT	
VA-0170	LOUISIANA-PACIFIC CORP.	VA	11/2/1989	4/30/1990	PRESS, 2	30.005	0		VOC	70.3	TON/YR	TALL STACKS
WI-0079	LOUISIANA PACIFIC CORP.	HAYWARD, WI	3/22/1994	8/9/1994	PRESS	30.005	21.58	MMBTU/HR	VOC	1.73	LB/HR	RTO
									PM	0.65	LB/HR	RTO
									CO	8.2	LB/HR	RTO
VA-0219	GEORGIA-PACIFIC CORPORATION	BROOKNEAL, VA	5/18/1994	10/20/1995	PRESS	30.005	50000	SQ FT/HR	VOC	21.22	TON/YR	FAN POWERED STACK
									CO	29.71	TON/YR	FAN POWERED STACK
									TSP (PM)	63.66	TON/YR	FAN POWERED STACK
									PM10	63.66	TON/YR	FAN POWERED STACK
									VE	10%	OPACITY	FAN POWERED STACK
									NOX	1.27	TON/YR	FAN POWERED STACK
MI-0240	LOUISIANA PACIFIC CORP.	MI	3/1/1996	5/31/1996	BOARD PRESS	30.005	0		VOC	9.1	PPH	REGENERATIVE THERMAL OXIDIZER (RTO)
MI-0240	LOUISIANA PACIFIC CORP.	MI	3/1/1996	5/31/1996	BOARD PRESS	30.005	0		PM10	12.1	PPH	REGENERATIVE THERMAL OXIDIZER (RTO)
AL-0111	TEMPLE-INLAND FOREST PRODUCTS CORPORATION	MONROEVILLE, AL	3/16/1998	4/24/1998	BOARD PRESS SYSTEM W/ RTO AND LOW NOX BURNERS	30.005	150	MMSF/YR 3/4 IN BASIS	CO	11.17	LB/HR	RTO AND LOW-NOX BURNERS
									VOC	6.13	LB/HR	RTO AND LOW-NOX BURNERS
									PM	3.23	LB/HR	RTO AND LOW-NOX BURNERS
									NOX	7.34	LB/HR	RTO AND LOW-NOX BURNERS
AR-0023	GEORGIA-PACIFIC ORIENTED STRANDBOARD FACILITY	FORDYCE, AR	6/8/1999	8/24/2000	PRESS, ORIENTED STRAND BOARD	30.005	475	MMSF/Y	VOC	20.05	LB/HR	REGERATIVE THERMAL OXIDIZER
									NOX	10.73	LB/HR	LOW NOX BURNERS, FUEL ENHANCEMENT
									PM10	2.83	LB/HR	RTO

TABLE 5-6: RBLC SEARCH RESULTS FOR PRESS - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
									CO	7.25	LB/HR	RTO
AR-0029	TEMPLE INLAND FOREST PRODUCTS CORP.	HOPE, AR	11/19/1999	8/30/2000	PRESS	30.005	NO DATA	NO DATA	VOC	3.5	LB/HR	RTO
									PM	2.5	LB/HR	RTO
									NOX	6.0	LB/HR	LOW NOX BURNER ON RTO
									CO	12.4	LB/HR	GOOD COMBUSTION
FL-0211	GEORGIA PACIFIC - HOSFORD OSB PLANT	HOSFORD, FL	10/13/2000	1/9/2001	PANEL PRESS W/ ONE RTO OR TCO	30.005	475000	SQFT	VOC	10	LB/HR	REGENERATIVE THERMAL OXIDIZER (RTO) OT THERMAL CATALYTIC OXIDIZER (TCO)
									PM10	2.8	LB/HR	RTO OR TCO
									VE	5%	OPACITY	RTO OR TCO
									CO	7.3	LB/HR	RTO OR TCO
									NOX	10.7	LB/HR	LOW NOX BURNER IN RTO OR TCO
FL-0211	GEORGIA PACIFIC - HOSFORD OSB PLANT	HOSFORD, FL	10/13/2000	1/9/2001	PANEL PRESS W/ ONE RTO OR TCO	30.005	475000	SQFT	VOC	10	LB/HR	REGENERATIVE THERMAL OXIDIZER (RTO) OT THERMAL CATALYTIC OXIDIZER (TCO)
AR-059	GEORGIA-PACIFIC CORPORATION	CALHOUN, AR	1/7/2003	6/30/2003	PRESS, OSB	30.005	600	MMSF/YR	PM10	3.5	LB/HR	MULTICLONES, TCO
									VOC	25.3	LB/HR	TCO
									CO	9.2	LB/HR	TCO
									NOX	13.5	LB/HR	LOW NOX BURNERS FOR TCO
MI-0353	WEYERHAEUSER	CRAWFORD, MI	6/11/2002	12/12/2002	PRESSES, OSB LINE	30.005	108000	LB/HR	PM10	8.4	LB/HR	BIOLOGICAL AIR FILTER
									VOC	19.5	LB/HR	BIOLOGICAL AIR FILTER (90% REMOVAL)
									CO	11.4	LB/HR	BIOLOGICAL AIR FILTER (30% REMOVAL)
SC-0074	KRONOTEX, USA - BARNWELL	BARNWELL, SC	4/8/2002	1/13/2003	PRESS, CONTINUOUS, MDF	30.005	273312	MSF/YR	PM10	0.2673	LB/HR	RTO/TCO
									VOC	2.64	LB/HR	RTO/TCO
									CO	16.694	LB/HR	NONE
									NOX	13.71	LB/HR	LOW NOX BURNERS AND HEAT RECOVERY
AR-0039	DEL TIN FIBER LLC	UNION, AR	5/9/2001	12/20/2002	PRESS VENTED THROUGH HEAT ENERGY SYSTEM, CALLIDUS	30.005	291	MMBTU/HR	PM10	28.19	LB/HR	ESP/BAGHOUSE
									VOC	10	LB/HR	CALLIDUS UNIT (THERMAL INCINERATION)
									CO	228.3	LB/HR	GOOD COMBUSTION PRACTICES

TABLE 5-6: RBLC SEARCH RESULTS FOR PRESS - ALL EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
LA-0139	LOUISIANA-PACIFIC CORPORATION	LASALLE PARISH, LA	12/7/200	3/2/2004	MDF PRESS	30.005	32	MMBTU/HR	PM10	6.79	LB/HR	RTO
									NOX	5.67	LB/HR	NONE
									VOC	2.17	LB/HR	RTO
									CO	17.27	LB/HR	NONE
MN-0042	POTLATCH CORPORATION	ITASCA, MN	12/4/2000	12/13/2002	NO ANALYSIS FOR PRESS							
NC-0081	HOMANIT USA, INC	MONTGOMERY, NC	12/29/1999	3/12/2004	NO ANALYSIS FOR PRESS							
TX-0307 (draft)	LOUISIANA-PACIFIC CARTHAGE OSB MILL	PANOLA, TX	12/16/1998	3/2/2004	PRESS	30.005	597.23	MMSF/YR	PM10	9.58	LB/HR	FABRIC FILTER
									VE	10%	OPACITY	FABRIC FILTER
									VOC	5.23	LB/HR	RTO
									NOX	12.02	LB/HR	NONE
									CO	36.59	LB/HR	RTO
AL-0156	LOUISIANA-PACIFIC CORP.	CULLMAN, AL	10/22/1997	7/2/2002	BOARD PRESS SYSTEM, OSB	30.005	NO DATA	NO DATA	VOC	4.74	LB/HR	RTO
									CO	20.84	LB/HR	RTO
									NOX	12.84	LB/HR	LOW NOX BURNERS
									PM	9.86	LB/HR	RTO

TABLE 5-8: RBLC SEARCH RESULTS FOR PRODUCT HANDLING/FINISHING - PM/PM_{10} and VOC EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
VA-0219	GEORGIA-PACIFIC CORPORATION	BROOKNEAL, VA	5/18/1994	10/20/1995	LOW PRESSURE PNEUMATIC DUST HANDLING SYSTEMS	30.005	50000	SQ FT/HR	PM/PM10	39.44	TPY	BAGHOUSE
									PM/PM10	3.09	TPY	CYCLONE
VA-0057	LOUISIANA-PACIFIC CORP.	DUNGANNON, VA	2/17/1987	5/5/1987	CONVEYOR, FORMING	30.005	9.29	T/H	PM/PM10	0.7	LB/HR	FABRIC FILTER
					TRIMING-GRADING	30.005	8.96	T/H	PM/PM10	2.2	LB/HR	FABRIC FILTER
VA-0170	LOUISIANA-PACIFIC CORP.	VA	11/2/1989	4/30/1990	MATL. TRANSFER, CONVEYING, FORMING	30.005	0		PM/PM10	3.9	TPY	FABRIC FILTER
					DEBARKING	30.005	0		PM/PM10	2.4	TPY	
					TRIMMING GRADING	30.005	0		PM/PM10	11.6	TPY	FABRIC FILTER
CA-0809	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	4/1/1998	4/1/1999	RAW MATERIAL HANDLING OPERATIONS	30.005	0		PM/PM10	0.19	LB/HR	ADD-ON CONTROLS INDOOR STORAGE OF RAW FIBER MATERIAL AND BAGHOUSE
					MATERIAL HANDLING SANDERDUST	30.005	0		PM/PM10	0.005	GR/DSCF	ADD-ON CONTROLS: CARTER-DAY BAGHOUSES BAGHOUSES #1,2,4,5 AND 7 CONTROL EMISSIONS FROM BOARD FORMING, SAWING AND SANDING OPERATIONS
CA-0865	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	4/1/1998	6/17/1999	HANDLING, RAW MATERIAL	30.005	0		PM/PM10	0.19	LB/HR	INDOOR STORAGE OF RAW MATERIAL AND BAGHOUSE
					HANDLING, SANDERDUST	30.005	0		PM/PM10	0.005	GR/DSCF	CARTER-DAY BAGHOUSES. BAGHOUSES #1,2,4,5 AND 7 CONTROL EMISSIONS FROM BOARD FORMING, SAWING AND SANDING OPERATIONS.
CA-0809	LOUISIANA-PACIFIC CORPORATION	OROVILLE, CA	4/1/1998	4/1/1999	RAW MATERIAL HANDLING OPERATIONS	30.005	0		PM/PM10	0.19	LB/HR	ADD-ON CONTROLS INDOOR STORAGE OF RAW FIBER MATERIAL AND BAGHOUSE
					MATERIAL HANDLING SANDERDUST	30.005	0		PM/PM10	0.005	GR/DSCF	ADD-ON CONTROLS: CARTER-DAY BAGHOUSES BAGHOUSES #1,2,4,5 AND 7 CONTROL EMISSIONS FROM BOARD FORMING, SAWING AND SANDING OPERATIONS
VA-0036	MASONITE CORP.	STEWART, VA	6/25/1986	4/15/1987	SAW, FINISHING	30.005	20	T/H	PM/PM10	0.9	LB/HR	BAGHOUSE
MN-0012	POTLATCH CORP.	BEMIDJI, MN	5/23/1989	9/29/1989	PNEUMATIC SYSTEM	30.005	156250	TON/YR FINISHED PRODUCT	PM/PM10	0.24	LB/HR	BAGHOUSE
FL-0211	GEORGIA PACIFIC - HOSFORD OSB PLANT	HOSFORD, FL	10/13/2000	1/9/2001	SCREEN FINES W/SAW TRIM TRANSFER	30.005	13.1	T/H	PM/PM10	2.1	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					SAW TRIM/FINISHING	30.005	2.5	T/H	PM/PM10	1.3	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					MATERIAL REJECT/ FLYING SAW	30.005	0.59	T/H	PM/PM10	2	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					SPECIALTY SAW/SANDER	30.005	2.1	T/H	PM/PM10	2.2	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					FUEL SYSTEM PNEUMATICS	30.005	2.1	T/H	PM/PM10	0.3	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					FORMING BINS	30.005	0.44	T/H	PM/PM10	1.9	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					HAMMER MILL	30.005	13.1	T/H	PM/PM10	2.1	LB/HR	INTEGRATED CYCLONE AND BAG FILTER.
					EDGE SEALING/STENCILING BOOTH	30.005	102125	GAL/YR	PM/PM10	0.1	LB/HR	DRY FILTER SYSTEM
MT-0016	PLUM CREEK MANUFACTURING, L.P.	COLUMBIA FALLS, MT	12/23/1999	3/5/2001	BAGHOUSE, LINE 2 SANDER AND FORMING	30.005	50000	CFM	PM/PM10	2.14	LB/HR	THIS IS THE CONTROL.
					BAGHOUSE, LINE 2 BURNER FUEL	30.005	10000	CFM	PM/PM10	0.43	LB/HR	THIS IS THE CONTROL
AR-0029	PRODUCTS CORP.	HOPE, AR	11/19/1999	8/30/2000	MATERIAL HANDLING (16 BAGHOUSES)	30.005			PM/PM10	0.1	LB/HR	BAG HOUSES
SC-0074	KRONOTEX, USA, INC.	BARNWELL, SC	4/8/2002	1/13/2003	WOOD DUST SYSTEM	30.005			PM/PM10	0.05	GR/DSCF	BAGHOUSE
TX-0345	TEMPLE INLAND FOREST PRODUCTS CORP.	ANGELINA, TX	9/28/2001	10/21/2003	SANDER DUST FUEL BIN	30.005			PM/PM10	0.68	LB/HR	NO CONTROLS
					FORMING LINE				PM/PM10	0.81	LB/HR	NO CONTROLS
					BOARD SAWING AND CONVEYOR DUST				PM/PM10	1.43	LB/HR	BAGHOUSE
					BOARD SANDING LINE NO.1				PM/PM10	0.25	LB/HR	BAGHOUSE
					BOARD SANDING LINE NO.1				VOC	0.53	LB/HR	NO CONTROLS
					BOARD SANDING LINE NO.2				PM/PM10	2.24	LB/HR	BAGHOUSE
					BOARD SANDING LINE NO.2				VOC	1.62	LB/HR	NO CONTROLS
					REJECTS HANDLING				PM/PM10	0.34	LB/HR	NO CONTROLS
MT-0018	LOUISIANA PACIFIC CORP.	MISSOULA, MT	8/24/2001	10/6/2003	BAGHOUSES, MISCELLANEOUS	30.005			VOC	NO EMISSION	NA	NO CONTROLS
AR-0039	DEL TIN FIBER LLC	UNION, AR	5/9/2001	12/20/2002	RAW MATERIAL HANDLING SOURCES (13 TOTAL)	30.005			PM/PM10	99.90%	REDUCTION	BAGHOUSE
LA-0139	LOUISIANA PACIFIC CORP., MDF	LASALLE PARISH, LA	12/7/2000	3/2/2004	HIGH PRESSURE SANDER DUST	30.005	470	ACFM	PM/PM10	0.04	LB/HR	BAGHOUSE
									VOC	0.2	LB/HR	NO CONTROLS
					LOW PRESSURE SANDER DUST		58000	ACFM	PM/PM10	4.97	LB/HR	BAGHOUSE
									VOC	1.35	LB/HR	NO CONTROLS
					LOW PRESSURE SAW TRIM		16200	ACFM	PM/PM10	1.39	LB/HR	BAGHOUSE
									VOC	0.2	LB/HR	NO CONTROLS
					HIGH PRESSURE SAW TRIM		470	ACFM	PM/PM10	0.04	LB/HR	BAGHOUSE
									VOC	0.02	LB/HR	NO CONTROLS
					MATERIAL REJECT		13000	ACFM	PM/PM10	1.11	LB/HR	BAGHOUSE
									VOC	0.5	LB/HR	NO CONTROLS
					CHIPS AND SHAVINGS LOADING AND UNLOADING		800	T/D	PM/PM10	1.08	LB/HR	ENCLOSED STORAGE
					CHIPS AND SHAVINGS STOCKPILE		21	T/H	PM/PM10	0.42	LB/HR	ENCLOSED STORAGE

TABLE 5-8: RBLC SEARCH RESULTS FOR PRODUCT HANDLING/FINISHING - PM/PM_{10} and VOC EMISSIONS

RBLC ID NUMBER	FACILITY	CITY AND STATE	PERMIT DATE	RBLC LAST UPDATE	PROCESS	PROCESS TYPE	THROUGHPUT	THROUGHPUT UNITS	POLLUTANT	PERMIT EMISSION RATE	PERMIT EMISSION RATE UNIT	BACT SELECTED TECHNOLOGY
NC-0081	HOMANIT USA, INC	MONTGOMERY, NC	12/29/1999	3/12/2004	MAT REJECT CONVEYOR	30.005			PM/PM10	0.1	LB/HR	BAGHOUSE
					COARSE SANDERDUST CONVEYOR				PM/PM10	0.1	LB/HR	BAGHOUSE
					FINE SANDERDUST CONVEYOR				PM/PM10	0.1	LB/HR	BAGHOUSE
					SAWING/CUTTING/SHREDDING CONVEYOR				PM/PM10	0.1	LB/HR	BAGHOUSE
TX-0307	LOUISIANA PACIFIC CORPORATION	PANOLA, TX	12/16/1998	3/2/2004	SAWLINE COLLECTOR	30.005			PM/PM10	0.97	LB/HR	BAGHOUSE
									VOC	2.49	LB/HR	NO CONTROLS
					ASPIRATION SYSTEM				PM/PM10	0.5	LB/HR	BAGHOUSE
									VOC	17.14	LB/HR	NO CONTROLS
					RAW FUEL BIN COLLECTOR				PM/PM10	0.46	LB/HR	BAGHOUSE
									VOC	5.15	LB/HR	NO CONTROLS
					MATERIAL REJECT COLLECTOR				PM/PM10	1.15	LB/HR	BAGHOUSE
									VOC	1.81	LB/HR	NO CONTROLS
					TONGUE AND GROOVE SANDERDUST COLLECTOR				PM/PM10	0.9	LB/HR	BAGHOUSE
									VOC	1.81	LB/HR	NO CONTROLS
					SANDERDUST RECEIVING				PM/PM10	0.02	LB/HR	BAGHOUSE
									VOC	0.03	LB/HR	NO CONTROLS
					FINISH FUEL BIN COLLECTOR				PM/PM10	0.57	LB/HR	BAGHOUSE
									VOC	4.44	LB/HR	NO CONTROLS
					BARK HANDLING				PM/PM10	0.11	LB/HR	BAGHOUSE
					EXCESS FUEL SYSTEM				PM/PM10	0.01	LB/HR	BAGHOUSE
GA-0076	TEMPLE-INLAND FOREST PRODUCTS CORPORATION	MCDUFFIE, GA	9/3/1997	4/21/2003	DRY MATERIAL REJECTS BAGHOUSE	30.005			PM/PM10	0.001	LB/HR	BAGHOUSE
					END TRIM, EDGE CLEANING				PM/PM10	0.001	LB/HR	CYCLONE AND BAGHOUSE
					RAW MATERIALS FINES BIN BAGHOUSE				PM/PM10	0.08	LB/HR	BAGHOUSE
					BOARDLINE CYCLONE AND BAGHOUSE				PM/PM10	0.0007	LB/HR	CYCLONE AND BAGHOUSE
					BOARD SAWING, CONVEYOR DUST AND SHELF SAW BAGHOUSE				PM/PM10	0.43	LB/HR	BAGHOUSE
					TRIMS HOG RETURN LINE CYCLONE AND BAGHOUSE				PM/PM10	0.002	LB/HR	BAGHOUSE
					SANDER DUST FUEL BIN BAGHOUSE				PM/PM10	0.11	LB/HR	BAGHOUSE
MI-0311	WEYERHAEUSER COMPANY	CRAWFORD, MI	11/14/1995	6/3/2003	WOOD-HANDLING SYSTEMS, TOTAL (7)	30.005			PM/PM10	1.86	LB/HR	BAGHOUSE
VA-0216	J.M. HUBER CORPORATION	HALIFAX, VA	1/5/1994	8/30/2002	MATERIAL HANDLING SYSTEM, DUST	30.005			PM/PM10	13.83	LB/HR	BAGHOUSE

6. AIR QUALITY ANALYSIS

An air quality analysis has been performed as part of this permit action for NO_X, PM_{10}, and CO to meet PSD permitting requirements for these pollutants since emission increases exceed the PSD Significant Emission Rates. The methodology used in conducting the analysis is presented in Sections 6.1 and 6.2, followed by the results of the PSD compliance demonstration in Sections 6.3 and 6.4. Section 6.5 discusses ambient monitoring requirements as determined from modeling results. Additional impacts to air quality have been considered and are discussed in Section 6.6. An ambient impact assessment of toxic air pollutants has also been conducted as part of this permit application, the results of which are presented in Section 6.7 of this report. Because of Cordele's location relative to a federally protected Class I Area, an evaluation of impacts on air quality related values has been conducted for this project. A summary of this evaluation is presented in Section 6.8 of this report, the complete results of which have been submitted to the Federal Land Manager under separate cover for review.

The air quality dispersion modeling analyses discussed in this report can be summarized as follows:

- Significant ambient impacts of NO_2 were predicted within a maximum distance of 3.5 km from the facility;
- Ambient impacts of NO_2 due to PSD Increment-consuming emissions from the Cordele OSB Mill and significant regional sources were predicted to be below PSD Increment thresholds;
- Ambient impacts of NO_2 due to all emissions from the Cordele OSB Mill and significant regional sources demonstrated compliance with NAAQS;
- Significant ambient impacts of PM_{10} were predicted within a maximum distance of 12.3 km from the facility;
- Ambient impacts of PM_{10} due to PSD Increment-consuming emissions from the Cordele OSB Mill and significant regional sources were predicted to be below PSD Increment thresholds;
- Ambient impacts of PM_{10} due to all emissions from the Cordele OSB Mill and significant regional sources demonstrated compliance with NAAQS;
- No significant ambient impacts of CO were predicted and compliance with applicable NAAQS is presumed;
- Additional impacts to the soils, vegetation, and visibility of the surrounding area are not expected to be adverse;
- Predicted ambient impacts of toxic air pollutants were below allowable ambient concentrations as defined by Georgia EPD's guidelines;

The air quality modeling analyses included with this PSD permit application indicate that construction of the Cordele OSB Mill expansion project and continued operation of the Cordele OSB Mill is expected to be in compliance with applicable ambient standards for criteria and toxic air pollutants under normal operating conditions.

6.1 NAAQS AND PSD INCREMENT ANALYSIS STEPS

This air dispersion modeling analysis has been conducted in accordance with Appendix W of 40 CFR Part 51, which contains the *Guideline on Air Quality Models* (Revised, April 15, 2003). The methodologies followed were presented in a modeling protocol submitted to Georgia EPD by Trinity Consultants on behalf of Norbord on November 5, 2004.[29] The proposed modeling methodologies are consistent with current and recommended U.S. EPA procedures for dispersion modeling analyses.[30]

The proposed project will cause net emissions increases of NO_X, PM_{10}, and CO that are greater than the PSD Significant Emission Rates. Therefore, air dispersion modeling analyses are required to demonstrate compliance with the NAAQS and PSD Increments for these pollutants.

A summary of the tasks that are performed in a standard PSD air dispersion modeling analysis is presented in a flow chart provided as Figure 6-1. The analysis is completed in three principle steps: the Significance Analysis, the NAAQS Analysis, and the PSD Increment Analysis.

6.1.1 SIGNIFICANCE ANALYSIS

The Significance Analysis is used to determine whether the net emissions change associated with the Cordele OSB Mill Expansion Project, when processed in a dispersion model, leads to a significant impact upon the area surrounding a facility. "Significant" impacts are defined by ambient concentration thresholds commonly referred to as the Modeling Significance Levels (MSL). Table 6-1 lists the MSL, NAAQS, and PSD Increments for NO_2, and CO, and PM_{10}.

As shown in Figure 6-1, if the highest off-property concentration for a pollutant is less than the MSL when emission increases from the project are modeled, then further analyses are not required. If concentrations exceed the MSL, a NAAQS and PSD Increment analysis are required.

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[29] Letter from Mr. Ryan Gesser (Trinity Consultants) to Mr. James Stogner (Georgia EPD) regarding the Air Dispersion Modeling Protocol for the Cordele OSB Mill, Cordele, Georgia, November 5, 2004.

[30] 40 CFR §51, Appendix W, *Guideline on Air Quality Models*, April 15, 2003.

TABLE 6-1. MODELING SIGNIFICANCE LEVELS, NAAQS, AND PSD CLASS I AND II INCREMENTS FOR NO_2, PM_{10}, AND CO.

Pollutant	Averaging Period	PSD MSL ($\mu g/m^3$)	Primary and Secondary NAAQS ($\mu g/m^3$)	Class I PSD Increment ($\mu g/m^3$)	Class II PSD Increment ($\mu g/m^3$)
NO_2	Annual	1	100	2.5	25
PM_{10}	24-hour	5	150	8	30
	Annual	1	50	4	17
CO	1-hour	2,000	40,000	--*	--*
	8-hour	500	10,000	--*	--*

* No PSD Increments have been established for CO.

In addition to determining whether the applicant can forgo further analysis, the Significance Analysis is used to determine whether the applicant is exempt from ambient monitoring requirements. It is also used to define the significant impact area within which compliance with the NAAQS and PSD Increments must be demonstrated. The significance analysis demonstrated that significant impacts of CO would not result from the proposed Cordele OSB Mill expansion project (refer to Section 6.3). Therefore, CO was not considered in further PSD modeling analyses.

6.1.2 NAAQS ANALYSIS

The primary NAAQS are the maximum concentration ceilings, measured in terms of total concentration of a pollutant in the atmosphere, that define the "levels of air quality which the U.S. EPA judges are necessary, with an adequate margin of safety, to protect the public health."[31] Secondary NAAQS define the levels that "protect the public welfare from any known or anticipated adverse effects of a pollutant." The primary and secondary NAAQS, listed in Table 6-1, are equivalent for NO_X and PM_{10}. Therefore, a demonstration of compliance with the primary NAAQS also demonstrates compliance with the secondary NAAQS.

The objective of the NAAQS analysis is to demonstrate through dispersion modeling that emissions from the Cordele OSB Mill do not contribute to or cause a violation of the NAAQS. In the NAAQS analysis, the potential emissions from all emission units at the Cordele facility combined with the emissions of sources included in a regional source inventory were modeled together. The resulting impacts, added to appropriate background concentrations, were assessed against the applicable NAAQS to demonstrate that the Cordele OSB Mill neither causes nor contributes to any modeled exceedance of an applicable air quality standard.

[31] 40 CFR §50.2(b).

Because the form of the NO_2 NAAQS is based on a simple annual arithmetic mean, the highest modeled concentration among five consecutive years of meteorological data is assessed against the NAAQS to demonstrate compliance. PM_{10} is also assessed on an annual average basis, for which the highest modeled concentration among five consecutive years of meteorological data is compared to an annual arithmetic mean standard, and on a 24-hour average basis. Georgia EPD evaluates compliance with the PM_{10} NAAQS consistent with GRAQC 391-3-1-.02(4)(c), *Ambient Air Standards – PM_{10}*:

> *The concentration of PM_{10} in the ambient air for any 24-hour period shall not exceed 150 micrograms per cubic meter for more than one such 24-hour period per year.*

Accordingly, dispersion modeling of 24-hour average PM_{10} impacts is conducted to compare the highest, second-high (H2H) impact at each receptor for each meteorological data year modeled.

6.1.3 PSD INCREMENT ANALYSIS

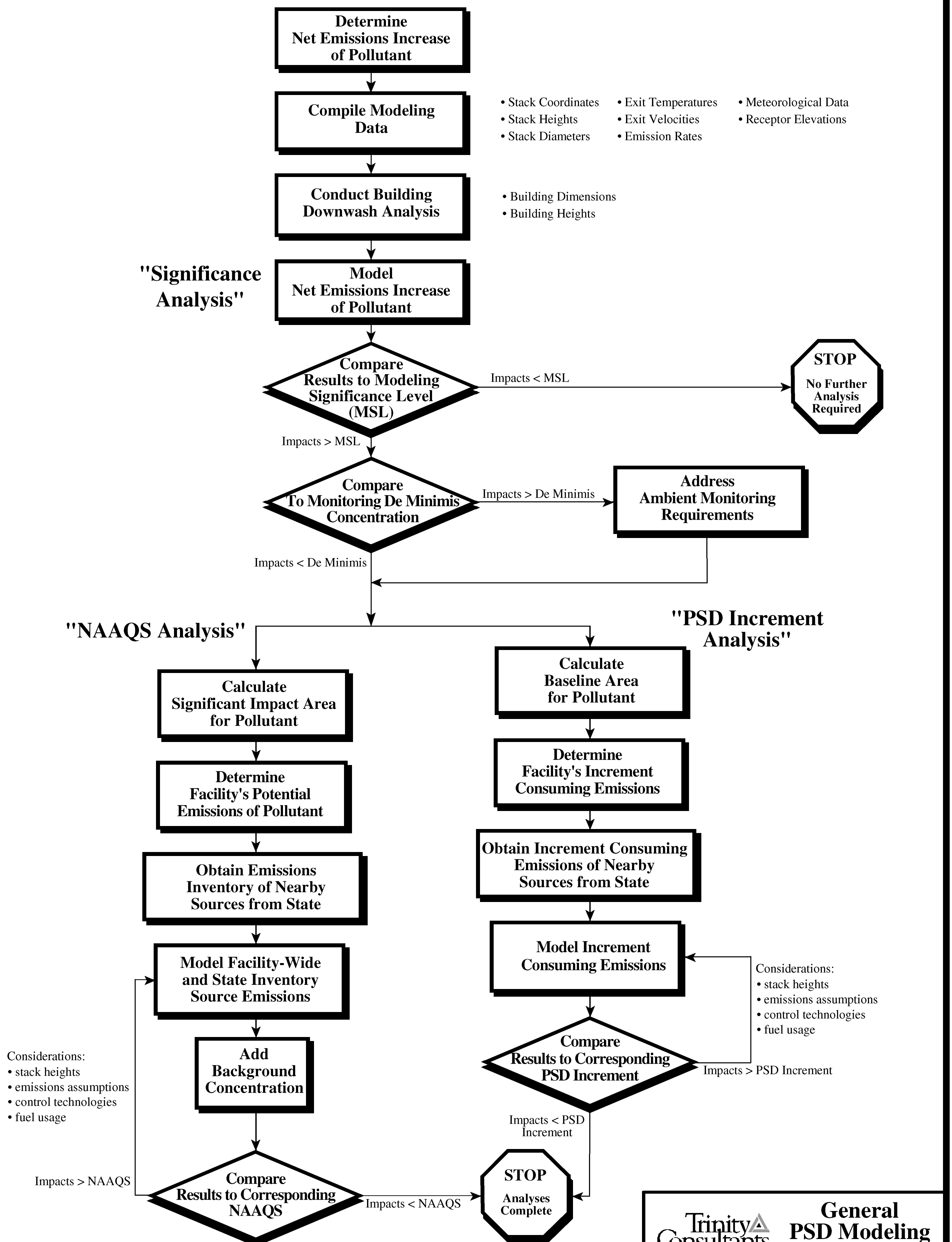
The PSD regulations were enacted primarily to "prevent deterioration" of air quality in areas of the country where the air quality was better than the NAAQS. To achieve this goal, the U.S. EPA established PSD Increments for certain pollutants. The sum of the PSD Increment concentration and a baseline concentration defines a "reduced" ambient standard, either lower than or equal to the NAAQS that must be met in an attainment area. Significant deterioration is said to have occurred if the *change* in emissions occurring since a baseline date results in an off-property impact greater than the PSD Increment (i.e., the increased emissions "consume" more than the available PSD Increment).

The U.S. EPA has defined PSD Increments for PM_{10}, SO_2, and NO_2. The PSD Increments are further broken into Class I, II, and III Increments. The Cordele OSB Mill is located in a Class II area. A federally protected Class I Area, the Okefenokee National Wildlife Refuge, lies approximately 170 km from the Cordele facility; therefore, incremental impacts on this area were also evaluated as part of PSD review, the results of which were submitted to the Federal Land Manager under separate cover. The Class I and II PSD Increments for NO_2 and PM_{10} were listed in Table 6-1.

To demonstrate compliance with the PSD Increments, "Increment affecting emissions" from the Cordele OSB Mill and other nearby sources are modeled and assessed against the PSD Class II Increment. For the annual average NO_2 and PM_{10} standards the highest incremental impact of five meteorological data years modeled is used. For the 24-hour PM_{10} standard, the H2H impact of five meteorological data years modeled is used.

The determination of whether an emissions change at a given source consumes or expands Increment is based on the source definition and the time the change occurs in relation to baseline dates. The major source baseline date for NO_2 is February 8, 1988, and for PM_{10} is January 6, 1975. Emission changes at major sources that occur after the major source baseline date affects Increment. In contrast, emission changes at minor sources only affect Increment after the minor source baseline date, which is set at the point the first PSD application is completed in a given area, usually arranged on a county-by-county basis. Georgia EPD has confirmed for this project that the minor source baseline date in Crisp County for NO_2 and PM_{10} was established on August 5, 1988, which was established when Masonite submitted the initial PSD permit application for the Cordele OSB Mill now owned and operated by Norbord. Therefore emission changes at major sources since February 1988 and minor sources since August 1988 were considered Increment affecting for this analysis, including all of the sources at the Cordele OSB Mill. For this reason, sources that were previously permitted by Masonite or International Paper, who operated the facility after Masonite but before Norbord, and have since been removed from operation are excluded completely from the modeling analyses since no source ever operated at the mill would have been considered part of the baseline.

General PSD Modeling Flow Chart



Note: "Impacts" refers to off-property impacts.

Trinity Consultants

6.2 DISPERSION MODELING METHODOLOGY

6.2.1 DISPERSION MODEL SELECTION AND BUILDING DOWNWASH ANALYSIS

Dispersion models predict downwind pollutant concentrations by simulating the evolution of the pollutant plume over time and space given data inputs including the quantity of emissions and the initial conditions (e.g., velocity, flowrate, and temperature) of the stack exhaust to the atmosphere. Building structures that obstruct wind flow near emission points might cause stack discharges to become caught in the turbulent wakes of these structures leading to downwash of the plumes. Wind blowing around a building creates zones of turbulence that are greater than if the building were absent. These effects generally cause higher ground level pollutant concentrations since building downwash inhibits dispersion. The main plant building at the Cordele OSB Mill is a large structure with considerable potential to cause plume downwash. The equipment associated with the expansion project will be located within the existing buildings and a smaller new structure. As such, the most accurate model to represent pollutant dispersion from the facility has been utilized to evaluate building downwash.

To estimate maximum ground-level concentrations, the PSD dispersion modeling analyses for this project were conducted using the latest version (04269) of the **I**ndustrial **S**ource **C**omplex model with **P**lume **RI**se **M**odel **E**nhancements (ISC-PRIME), which was most recently upgraded by U.S. EPA on August 26, 2004. The PRIME algorithms have been coupled with the regulatory ISCST3 model (version 02035) to form the ISC-PRIME model. ISC is a refined, steady-state, multiple source, Gaussian dispersion model and is the preferred model to use for industrial sources in this type of air quality analysis.[32]

On April 21, 2000, the U.S. EPA proposed[33] that ISC-PRIME be included as a regulatory guideline model in 40 CFR Part 51, Appendix W. U.S. EPA has proposed to ultimately replace ISCST3 with AERMOD, a next generation model that includes the PRIME algorithms. Georgia EPD has indicated that U.S. EPA Region 4 considers the use of ISC-PRIME for regulatory permitting purposes prior to its formal acceptance as a guideline model acceptable on a case-by-case basis subject to agency review.[34] Notwithstanding the building downwash algorithms, AERMOD would be preferred over ISCST3 in a situation where complex terrain is of particular concern. For this analysis of the Cordele OSB Mill Expansion Project in middle Georgia, complex terrain is not a concern in the area immediately surrounding the facility, and therefore the use of ISC-PRIME is suitable and preferred in anticipation of the final release of AERMOD due to the significance of building downwash. Norbord conducted a consequence analysis to demonstrate the effects of the PRIME algorithms for a given emissions

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[32] 40 CFR 51, Appendix W–*Guideline on Air Quality Models (April 2000 revision)*, Appendix A.5–Industrial Source Complex Model (ISC3).

[33] 61 FR 21,506, April 21, 2000.

[34] Letter from Mr. R. Douglas Neeley (U.S. EPA Region 4) to Mr. A. A. Linero (Florida Department of Environmental Protection) dated November 4, 1999, pursuant to Section 3.2 of 40 CFR Part 51, Appendix W.

configuration and that in the absence of downwash effects the ISCST3 and ISC-PRIME predicted identical ambient impacts.
The primary improvements associated with the PRIME dispersion model are in the algorithms that predict pollutant concentrations for plumes that are affected by building downwash. Numerous comparative studies (including a draft consequence analysis prepared by the U.S. EPA) suggest that ISC-PRIME offers a considerably more accurate representation of building downwash effects.[35] Specifically, it improves upon the downwash algorithms of the ISCST3 model in which a stack was assumed to be located centrally adjacent to the lee side of the dominant downwash structure even though the stack may actually be located upwind, downwind and up to five building heights away, and/or laterally displaced, from the structure. In other words, even if a stack were located a significant distance away from a structure, ISCST3 would predict the downwash influence as if the stack is located directly adjacent to the structure. ISC-PRIME improves upon these assumptions by having the ability to model streamlines in the downwind wake cavity and by employing an enhanced numerical simulation of the plume mass, buoyant energy, and momentum. As a result the plume is modeled throughout the cavity, near-wake, and far-wake regions and the source-structure relationship is more accurately represented.

Figure E-2 in Appendix E shows the location of all buildings and stacks associated with the project that are considered in the downwash analysis. The existing WESP exhaust stack (PS01) and the new Dryer TO stack (S201), from which a significant fraction of facility-wide emissions emanate, lie within wake region (from 53 meters to 178 meters downwind) of the main plant building at approximately 85 meters and 158 meters from the building. This distance is equivalent to 4.9*L* and 9.2*L* or 4.9 times and 9.2 times the height of the main building, respectively. Because the separation distance is less than 5*L* for the existing WESP, the ISCST3 model would apply building downwash assuming the stack were located directly adjacent to the building, when in fact there is nearly the maximum separation distance at which downwash is considered to be important. A distance greater than 5*L* separates the new Dryer TO stack, such that the model presumes there is no downwash effect for emissions from this source. The remaining emission points, many of which are baghouses with unfavorable dispersion characteristics, are located adjacent to the main production building where the downwash effect is important. Figures 6-2 and 6-3 depict the three dimensional view of the Cordele OSB Mill from two vantage points to illustrate the relationships of the stacks and structures.

[35] *See*, for example, Paine, R.J. and F. Lew, *Consequence Analysis for ISC-PRIME* (Acton, MA, Report TR-2460026: 1997) or Schulman, L.L., D.G. Strimaitis, and J.S. Scire, *Development and Evaluation of the PRIME Plume Rise and Building Downwash Model* (Phoenix, AZ, Paper No. 4B.1: 1997).

FIGURE 6-2. THREE-DIMENSIONAL VIEW OF THE CORDELE OSB MILL FROM THE SOUTHEAST

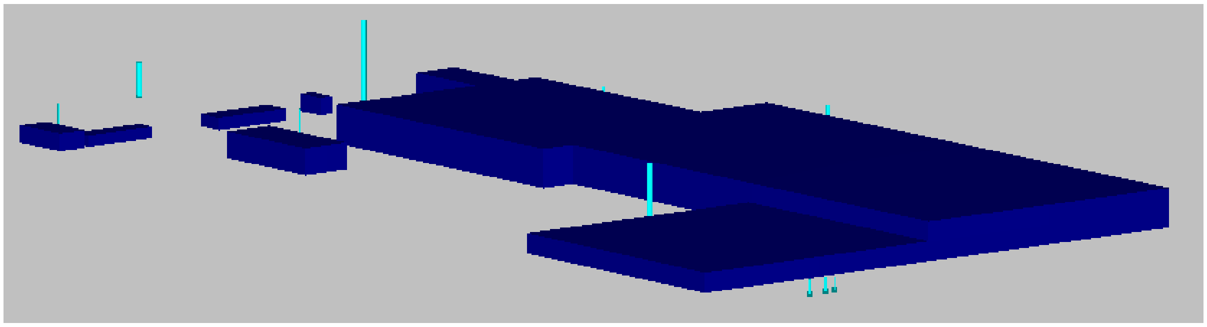
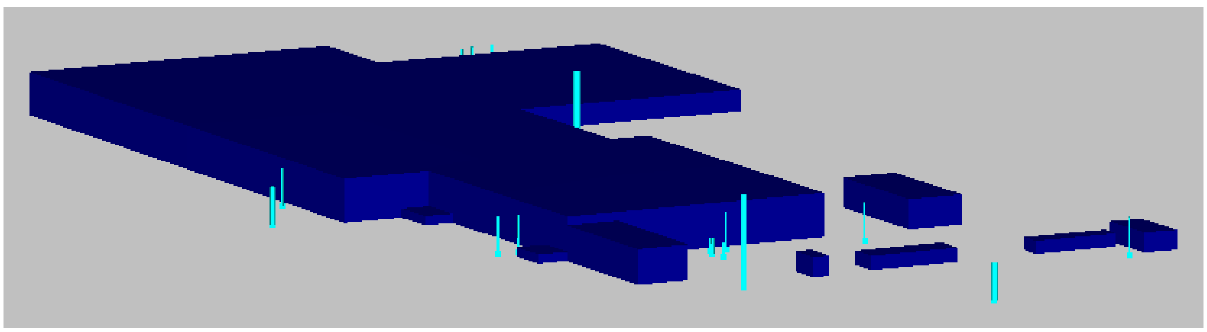


FIGURE 6-3. THREE-DIMENSIONAL VIEW OF THE CORDELE OSB MILL FROM THE NORTHWEST



For the PSD modeling analyses, the direction-specific building dimensions used as input to the ISC-PRIME model were calculated using the *BREEZE®-AIR* software, developed by Trinity Consultants. This software incorporates the algorithms of the U.S. EPA-sanctioned Building Profile Input Program (BPIP) (version 95086), which has been adapted to incorporate the PRIME downwash algorithms and released by the U.S. EPA as "BPIPPRM". BPIPPRM is designed to incorporate the concepts and procedures expressed in the GEP Technical Support document, the Building Downwash Guidance document, and other related documents,[36] while incorporating the enhancements to improve prediction of ambient impacts in building cavities and wake regions. Comparison studies have shown that ISC-PRIME induces no biases to over- or under-predict ambient concentrations outside of the wake and cavity regions.

Included on CD-ROM with this permit application are the input and output files from the building downwash analysis. These files list all the equivalent building dimensions calculated for each source modeled in any of the analyses conducted.

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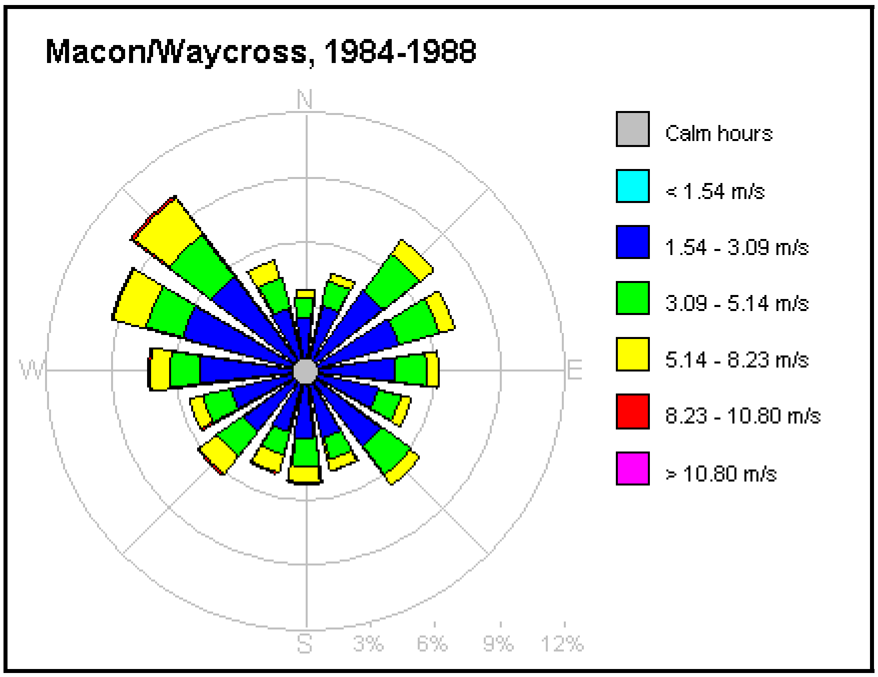
[36] U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, *Guidelines for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) (Revised),* Research Triangle Park, North Carolina, EPA 450/4-80-023R, June 1985.

6.2.2 METEOROLOGICAL DATA

The ISC-PRIME air dispersion modeling was performed using 1984 through 1988 preprocessed meteorological data based on surface observations taken from Macon, Georgia (National Weather Service [NWS] station number 03813) and upper air measurements from Waycross, Georgia (NWS station number 13861). The anemometer height at the Macon NWS station during this period was 23 feet (7.01 meters). The meteorological data set used was specified by and obtained from Georgia EPD for modeling analyses in middle Georgia. Figure 6-4 presents a windrose showing the distribution of wind direction and speed during the modeled period.

FIGURE 6-4. WINDROSE FOR METEOROLOGICAL DATA SET



6.2.3 LAND-USE CLASSIFICATION

The land type near the Cordele OSB Mill is classified as either rural or urban so that appropriate dispersion parameters can be used within ISC-PRIME. Two land classification procedures, one based on land-use procedure and the other based on population density, can be used to determine the appropriate application of urban or rural dispersion coefficients in a modeling analysis.[37,38,39] Of the two, the land-use procedure is preferred by U.S. EPA. The

[37] Auer, Jr., A.H., "Correlation of Land Use and Cover with Meteorological Anomalies," *Journal of Applied Meteorology*, 17:636-643, 1978.

[38] Irwin, J.S., *Proposed Criteria for Selection of Urban Versus Rural Dispersion Coefficients*, Staff Report, Meteorology and Assessment Division, U.S. EPA, Research Triangle Park, NC, Docket Reference No. II-B-8, updated.

[39] 40 CFR §51, Appendix W, *Guideline on Air Quality Models*.

Auer land-use procedure is used in this study. Land-use classifications under the Auer system are listed in Table 6-2.

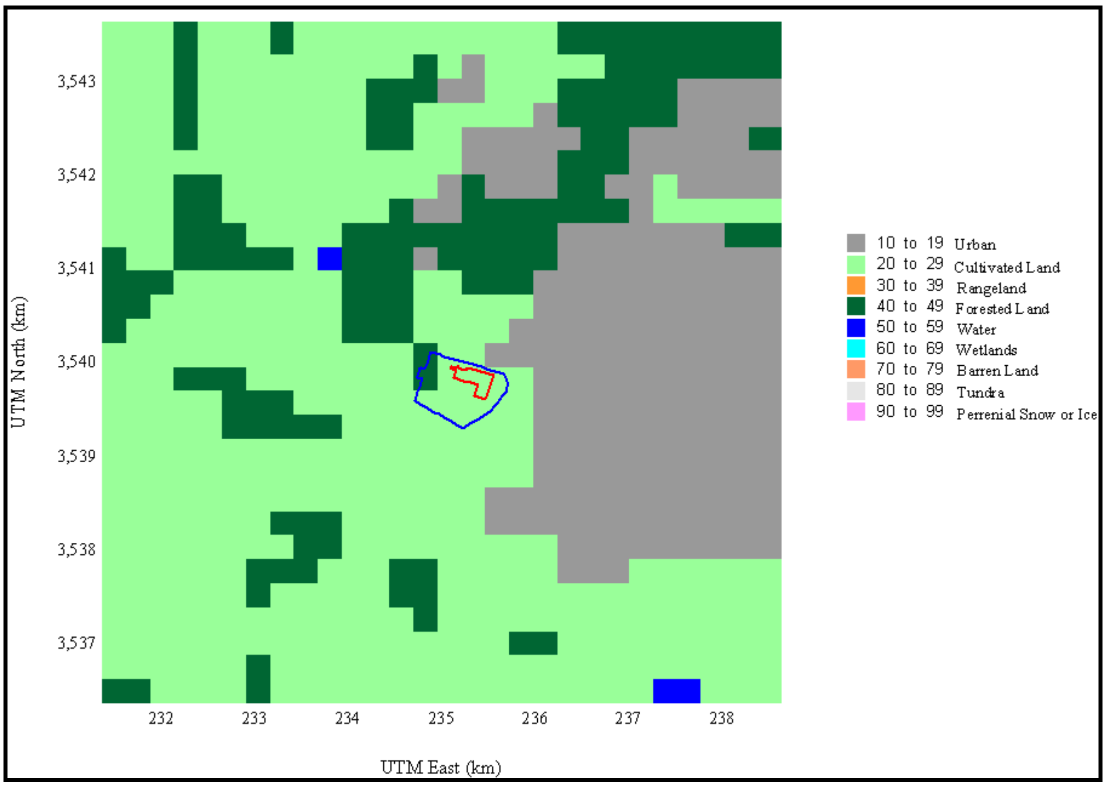
TABLE 6-2. LAND-USE CLASSIFICATIONS FOR THE AUER CLASSIFICATION PROCEDURE.

Type	Use and Structures	Vegetation
I1	**Heavy Industrial.** Major chemical, steel and fabrication industries; generally 3-5 story buildings, flat roofs	Grass and tree growth extremely rare; <5% vegetation
I2	**Light-moderate Industrial.** Rail yards, truck depots, warehouses, industrial parks, minor fabrications; generally 1-3 story buildings, flat roofs	Very limited grass, trees almost totally absent; <5% vegetation
C1	**Commercial.** Office and apartment buildings, hotels; >10 story heights, flat roofs	Limited grass and trees; <15% vegetation
R1	**Common Residential.** Single family dwelling with normal easements; generally one story, pitched roof structures; frequent driveways	Abundant grass lawns and light-moderately wooded; <70% vegetation
R2	**Compact Residential.** Single, some multiple, family dwelling with close spacing; generally <2 story, pitched roof structures; garages (via alley), no driveways	Limit lawn sizes and shade trees; <30% vegetation
R3	**Compact Residential.** Old multi-family dwellings with close (<2 m) lateral flat roof structures; garages (via alley) and ashpits, no driveways	Limited lawn sizes, old established shade trees; <35% vegetation
R4	**Estate Residential.** Expansive family dwelling on multi-acre tracts	Abundant grass lawns and lightly wooded; >80% vegetation
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
A2	**Agricultural Rural.**	Local crops (e.g., corn, soybean); 95% vegetation
A3	**Undeveloped.** Uncultivated; wasteland	Mostly wild grasses and weeds, lightly wooded; 90% vegetation
A4	**Undeveloped Rural.**	Heavily wooded; >95% vegetation
A5	**Water Surfaces.**	Rivers, lakes

To define the land-use in the area surrounding the Cordele facility using the Auer land-use procedure, a 3-km radius circle was drawn about the center of the plant. The category for a particular location is determined by referencing land-use maps published by the USGS. If the sum of land use types I1 (heavy industrial), I2 (light to moderate industrial), C1 (commercial), R2 (compact new residential) and R3 (compact old residential) is greater than or equal to 50% of the area within the radius, then the area should be classified as urban. The area is classified as rural if the sum of the above-mentioned land use types is less than 50%.

Figure 6-5 illustrates the land use in the area surrounding Cordele as extracted from digital land use and land cover data archived by the U.S. Geological Survey. Evaluating the land use using the Auer classifications shows that the majority of land use is cultivated land or forested (A2 or A4 classification). Although there is a considerable amount of urban land use (e.g., small town residential), the urban areas comprise less than 50% of the area, and referring to the windrose in Figure 6-4 the winds predominantly blow from the rural land cover areas. Accordingly, rural dispersion coefficients and mixing heights were specified in ISC-PRIME.

FIGURE 6-5. LAND USE ANALYSIS OF THE CORDELE OSB MILL



6.2.4 RECEPTOR GRIDS AND ELEVATIONS

In the air dispersion modeling analysis, ground-level concentrations are calculated on Cartesian receptor grids and at receptors placed along the property line. The property line receptors are spaced 50 meters apart starting at an arbitrary point on the boundary. The Cordele OSB Mill is surrounded by a continuous fence that was represented by the boundary receptors.

The Cartesian grids encompass an area extending up to 25 km from the Cordele OSB Mill, which encompasses all receptors at which an impact above the Modeling Significance Levels was calculated. The "fine" grid contains 100-meter spaced receptors extending approximately 10 kilometers from the property boundary. The "medium" grid contains 500-meter spaced receptors throughout the remainder of the domain to 25 kilometers. The location of receptors in relation to the Cordele facility are shown in Figures E-3 through E-5 in Appendix E for the fenceline, fine, and medium grids, respectively.

Terrain elevations based on Digital Elevation Model (DEM) data obtained from the USGS were input to the ISCS-PRIME model for each receptor. The DEM data consist of arrays of regularly spaced elevations and correspond to the 1:24,000 topographic quadrangle map series. The points in the array of elevations are at 30-meter intervals and are interpolated to determine elevations at the defined 100-meter, 500-meter, and 1,000-meter receptor intervals. Figure E-6 depicts the terrain variability for the receptors used in the modeling analysis.

6.2.5 Analysis of Terrain Classification

Topographical features of the area immediately surrounding the Cordele OSB Mill are depicted on the area map provided in Figure E-1. As shown, the area is characterized by rural surroundings with essentially flat terrain. An evaluation of types of terrain (e.g., simple or complex) that may be a factor in the modeling analyses was conducted. Complex terrain is defined as any terrain elevation exceeding stacktop height. Complex terrain is further sub-categorized into intermediate terrain (terrain elevation less than final plume rise height) and true complex terrain (terrain elevation greater than final plume rise height). A designation of terrain at a particular receptor is source dependent, since it depends on an individual source's release height.

For the purposes of designating terrain for the multiple-point modeling analysis conducted for the Cordele OSB Mill, a stack representative of those from which the majority of emissions emanate was chosen to define the terrain designation for receptors. Considering all modeled sources, representative, emissions weighted-average stack parameters were chosen to define terrain designations for all sources in this modeling analysis. These weighted average stack parameters were computed as a stack height of 91.6 feet (27.91 meters), diameter of 7.61 feet (2.38 meters), exhaust velocity of 70.3 feet per second (21.43 meters per second), and exhaust temperature 238 °F (380 K). These parameters were used to compute the plume rise for each hour of the meteorological data set, to obtain a minimum plume rise of 124 feet (38 meters).

The base elevation of the Cordele OSB Mill is 295 feet (90 meters) above mean sea level. Thus, receptors with a ground-level elevation exceeding 387 feet (118 meters) were considered intermediate terrain receptors, and ground level elevations above 511 feet (155 meters) were defined as true complex terrain receptors. Review of the elevation data for receptors within a region extending 25 km from the Cordele OSB Mill indicates that there is only one receptor with an elevation above 511 feet, which is located approximately 15 km to the northeast of the Mill. Since no significant impacts were predicted at these receptors, complex terrain is not an issue for this analysis. The ISC-PRIME model was run in default mode with elevated terrain heights and no further evaluation of complex terrain models is warranted.

6.2.6 GEP Stack Height Analysis

The U.S. EPA has promulgated stack height regulations that restrict the use of stack heights in excess of "Good Engineering Practice" (GEP) in air dispersion modeling analyses. Under these regulations, that portion of a stack in excess of 65 meters is generally not creditable when modeling to determine source impacts unless studies have been conducted to demonstrate that a height greater than 65 meters is justified.[40] This essentially prevents the use of excessively tall stacks to reduce ground-level pollutant concentrations. There are no sources at the Cordele OSB Mill with a release height above 65 meters (213.3 feet). Therefore, no GEP stack height analysis was warranted and all point sources were modeled at their actual release height.

6.2.7 Coordinate System

In all modeling analysis data files, the location of emission sources, structures, and receptors, are represented in the Universal Transverse Mercator (UTM) coordinate system. The UTM grid divides the world into coordinates that are measured in north meters (measured from the equator) and east meters (measured from the central meridian of a particular zone, which is set at 500 km). The central location of the Cordele OSB Mill is approximately 235.3 km East and 3,540 km North in Zone 17.

Because the area of the Cordele facility where structures and emissions units are located is flat, a single base elevation is used in the model data files for all sources. The base elevation for the facility is 295 feet (90 meters) above mean sea level.

6.2.8 Source Types and Stack Parameters

The ISC-PRIME dispersion model allows for emissions units to be represented as point, area, or volume sources. For point sources with unobstructed vertical releases, actual stack parameters (i.e., height, diameter, exhaust gas temperature, and gas exit velocity) were used in the modeling analyses. Emission units at the Cordele facility are planned to be operated with unobstructed vertical exhaust stacks. Each emissions source has an individual exhaust stack, the parameters for which are summarized in Table 6-3. Note that for sources with exhausts at ambient temperature, the exhaust temperature is input as 0 K, which forces the model to compute no buoyant plume rise for the source.

[40] 40 CFR §51.100(ii).

TABLE 6-3. SUMMARY OF STACK PARAMETERS FOR MODELING ANALYSES

Source ID	Source Description	Stack Height (ft)	Stack Height (m)	Stack Diameter (ft)	Stack Diameter (m)	Exhaust Velocity (ft/s)	Exhaust Velocity (m/s)	Exhaust Temperature (F)	Exhaust Temperature (K)
S01	WESP/Wellons	120.73	36.80	7.97	2.43	51.84	15.80	142	334.11
S03	System 1 Baghouse	20.00	6.10	4.66	1.42	59.68	18.19	Ambient	0
S04	System 2 Baghouse	20.00	6.10	4.33	1.32	59.81	18.23	Ambient	0
S10	HP Waste Baghouse	17.39	5.30	1.25	0.38	57.84	17.63	Ambient	0
S11	T&G Sander	21.33	6.50	3.84	1.17	57.32	17.47	Ambient	0
S12	T&G Saw Line	19.36	5.90	2.56	0.78	68.04	20.74	Ambient	0
S13	Globe Line	21.33	6.50	3.51	1.07	68.86	20.99	Ambient	0
S63	Press RTO	89.90	27.40	8.99	2.74	29.89	9.11	232	384.11
S201	Dryer Exhaust ([W]ESP/TO)	50.00	15.240	8.00	2.4384	82.94	25.2787	275	408.15
S202	Press Exhaust (TO)	50.00	15.240	6.00	1.8288	80.63	24.5749	245	391.48
S203	Resinated Fines	50.00	15.240	3.50	1.0668	77.99	23.7723	Ambient	0
S204	Non-resinated Fines	50.00	15.240	3.50	1.0668	77.99	23.7723	Ambient	0
S205	Finishing Line	50.00	15.240	3.50	1.0668	77.99	23.7723	Ambient	0
S206	Wet Strand Line	50.00	15.240	3.50	1.0668	77.99	23.7723	Ambient	0
S207	Dry Fuel Bin	50.00	15.240	2.34	0.7138	193.53	58.9877	Ambient	0
S208	Blowline	50.00	15.240	1.30	0.3962	81.66	24.8898	93	307.04

6.2.9 LOAD MODELING ANALYSIS

The *Guideline on Air Quality Models* states that modeling should contain sufficient detail to determine the maximum ambient concentration of the pollutant under consideration, and that this will likely involve modeling several operating loads or production rates. For some types of sources, operating at a reduced load translates into reduced stack gas exit velocities leading to different and potentially higher impact characteristics. This situation is not expected to apply to the new OSB line at the Cordele facility since each device is only normally operated within 90 to 100% of full load, other than during periods of start up, shutdown, or malfunctions.

6.2.10 CONVERSION OF NO_X TO NO_2

The MSL, NAAQS, and PSD Increments for nitrogen oxides are all expressed in terms of NO_2. Although PSD applicability is based on emissions of total oxides of nitrogen, the air quality analysis is limited to NO_2. Though the majority of NO_X emissions from the Norbord Georgia OSB Mill processes will be in the form of NO, a large portion of this NO converts to NO_2 after it is exhausted to the ambient air. A technique referred to as the Ambient Ratio Method is typically used to assess ground-level NO_2 concentrations based on model results of NO_X emissions.[41] Section 7.2.3 of the *Guideline on Air Quality Models* outlines a method for deriving NO_2 emissions by multiplying NO_X impacts from dispersion modeling by an ambient annual NO_2/NO_X ratio. This approach is commonly approved within U.S. EPA Region 4 for use in the Significance, NAAQS, and PSD Increment analyses for PSD permit applications.[42]

[41] *Federal Register*, Volume 60, 40465-40474, August 9, 1995.

[42] Letter from Mr. Jim Stogner (Georgia EPD) to Mr. Ryan Gesser (Trinity), dated March 22, 2002 in reference to the PSD air dispersion modeling protocol for the Elba Island LNG Terminal in Savannah.

The Ambient Ratio Method was utilized in this analysis to scale all NO_2 impacts in the Significance, NAAQS, and PSD Increment analyses for NO_X emissions using the default "Tier 2" assumption of 75% conversion of NO_X emissions.

6.3 SIGNIFICANCE ANALYSIS RESULTS

6.3.1 NO_2 SIGNIFICANCE ANALYSIS

The Significance Analysis for NO_2 was conducted using the following approach. Emission increases from the Cordele OSB Mill Expansion Project were modeled to determine the maximum off-site impact due to the new project for each of five years of meteorological data evaluated. Potential emissions that reflect the BACT limits proposed in this permit application were modeled in the Significance Analysis.

The results of the NO_2 Significance Analysis are presented in Table 6-4. This table lists the highest annual average NO_2 concentrations calculated for each of the five years of meteorological data evaluated. A plot showing the maximum annual average NO_2 concentrations at each receptor over the entire 5-year period is shown in Figure E-8, which also depicts the extent of the significant impact area at approximately 3.5 km.

TABLE 6-4. RESULTS OF THE NO_2 MODELING SIGNIFICANCE ANALYSIS

Pollutant	Averaging Period	Met Year	UTM East (km)	UTM North (km)	Max Impact (μg/m^3)	MSL (μg/m^3)	Significant ?
NO_X	Annual	1984	235.331	3,539.979	6.50	1	Yes
		1985	235.331	3,539.979	6.47	1	Yes
		1986	235.331	3,539.979	6.37	1	Yes
		1987	235.331	3,539.979	6.26	1	Yes
		1988	235.331	3,539.979	6.46	1	Yes
		Maximum	235.331	3,539.979	6.50	1	Yes

Table 6-4 shows that the proposed project causes impacts above the annual average NO_2 MSL. Therefore both a NAAQS and PSD Increment analysis were conducted for NO_2.

6.3.2 PM_{10} SIGNIFICANCE ANALYSIS

The Significance Analysis for PM_{10} was conducted using the following approach. Emission increases from the Cordele OSB Mill Expansion Project were modeled to determine the maximum off-site impact due to the new project for each of five years of meteorological data evaluated. Potential emissions that reflect the BACT limits proposed in this permit application were modeled in the Significance Analysis.

The results of the PM_{10} Significance Analysis are presented in Table 6-5. This table lists the highest 24-hour average and annual average PM_{10} concentrations calculated for each of the five years of meteorological data evaluated. A plot showing the maximum 24-hour average and annual average PM_{10} concentrations at each receptor over the entire 5-year period is shown in Figures E-9 and E-10, respectively, which also depict the extent of the significant impact area. Of the two PM_{10} analyses, the 24-hour average analysis had the larger radius of significant impact at approximately 12.3 km.

Table 6-5 shows that the proposed project causes impacts above the 24-hour average PM_{10} MSL. Therefore both a NAAQS and PSD Increment analysis were conducted for PM_{10}.

TABLE 6-5. RESULTS OF THE PM_{10} MODELING SIGNIFICANCE ANALYSIS

Pollutant	Averaging Period	Met Year	UTM East (km)	UTM North (km)	Max Impact ($\mu g/m^3$)	MSL ($\mu g/m^3$)	Significant ?
PM_{10}	24-hour	1984	235.400	3,540.100	17.53	5	Yes
		1985	235.187	3,540.023	17.84	5	Yes
		1986	235.400	3,540.100	16.16	5	Yes
		1987	235.400	3,540.100	17.80	5	Yes
		1988	235.400	3,540.100	19.08	5	Yes
		Maximum	235.400	3,540.100	19.08	5	Yes
PM_{10}	Annual	1984	235.331	3,539.979	4.91	1	Yes
		1985	235.331	3,539.979	4.83	1	Yes
		1986	235.331	3,539.979	4.98	1	Yes
		1987	235.331	3,539.979	4.87	1	Yes
		1988	235.331	3,539.979	4.95	1	Yes
		Maximum	235.331	3,539.979	4.98	1	Yes

6.3.3 CO SIGNIFICANCE ANALYSIS

The Significance Analysis for CO was conducted using the following approach. Emission increases from the Cordele OSB Mill Expansion Project were modeled to determine the maximum off-site impact due to the new project for each of five years of meteorological data evaluated. Potential emissions that reflect the BACT limits proposed in this permit application were modeled in the Significance Analysis.

The results of the CO Significance Analysis are presented in Table 6-6. This table lists the highest 1-hour average and 8-hour average CO concentrations calculated for each of the five years of meteorological data evaluated. A plot showing the maximum 1-hour average and 8-hour average CO concentrations at each receptor over the entire 5-year period is shown in Figures E-11 and E-12, respectively. Unlike for NO_X and PM_{10}, there are no significant impacts of CO associated with the proposed project. Therefore, the project is determined to neither cause nor contribute to an exceedance of the applicable NAAQS for CO and no further analysis is required for this pollutant.

TABLE 6-6. RESULTS OF THE CO MODELING SIGNIFICANCE ANALYSIS

Pollutant	Averaging Period	Met Year	UTM East (km)	UTM North (km)	Max Impact ($\mu g/m^3$)	MSL ($\mu g/m^3$)	Significant ?
CO	1-hour	1984	235.400	3,540.100	113.9	2,000	No
		1985	235.400	3,540.100	111.4	2,000	No
		1986	235.400	3,540.100	112.8	2,000	No
		1987	235.400	3,540.100	115.4	2,000	No
		1988	235.400	3,540.100	109.0	2,000	No
		Maximum	235.400	3,540.100	115.4	2,000	No
CO	8-hour	1984	235.283	3,539.993	75.14	500	No
		1985	235.200	3,540.100	61.17	500	No
		1986	235.283	3,539.993	75.62	500	No
		1987	235.400	3,540.100	69.23	500	No
		1988	235.400	3,540.100	73.13	500	No
		Maximum	235.283	3,539.993	75.62	500	No

6.3.4 SIGNIFICANT IMPACT AREA AND REGIONAL SOURCE INVENTORY

Because significant ambient impacts of NO_X and PM_{10} will result from this project, a refined NAAQS and PSD Increment modeling analysis that includes the contributions from sources in the surrounding area is required.

The first step in completing a NAAQS analysis is the determination of the significant impact area (SIA). The significant impact area encompasses a circle centered on the Cordele OSB Mill with a radius extending out to (1) the farthest location where the emissions increases cause a significant ambient impact, or (2) a distance of 50 km, whichever is less. Based on the results of the NO_2 and PM_{10} Significance Analyses, the radius of significant impact was calculated to be 3.5 km and 12.3 km, respectively.

The next step in completing the NAAQS and PSD Increment analysis is the development of a regional source inventory. All sources within 50 km of the SIA are presumed to potentially have a significant impact within Norbord's SIA. Therefore, to develop the regional inventory, possible regional sources within a 23-county area surrounding the Cordele OSB Mill were identified. Norbord worked with Georgia EPD to compile two regional source inventories. The first includes all significant regional sources presently in operation and was used for the NAAQS analysis. The second, which includes only PSD Increment affecting sources, was used for the PSD Increment analysis.

Two resources were used to develop the inventory of significant regional sources. Georgia EPD provided Norbord with locations, stack parameters, annual operating hours, and actual emission data for statewide industrial emissions sources operating during 2002. From this database, Norbord extracted 28 facilities from within the surrounding counties that would potentially cause significant air quality impacts and were considered for inclusion in the

NAAQS analysis. A second resource was an inventory of PSD Increment affecting sources maintained by Georgia EPD from a review of prior permit applications.[43] Norbord reviewed these data provided by Georgia EPD and determined that the sources listed in Table 6-7 should be considered in the analyses. All facilities listed in Table 6-7 were considered for inclusion in the NAAQS analysis, but only those sources listed as affecting Increment were considered for inclusion in the PSD Increment analysis.

The source data were compiled to calculate the potential emissions of each source and distances from the Cordele OSB Mill. To confirm the appropriate level of emissions were represented for each source, Norbord reviewed the Title V permits to estimate the allowable emissions for each facility, and scaled the reported actual emissions by the ratio continuous operation (i.e. 8,760 hours per year) to reported actual 2002 emissions.

All sources more than 50 km outside the significant impact area for each of NO_X and PM_{10} were excluded. For the sources within 50 km of the significant impact area, the "20D" rule was then applied to screen out insignificant sources. Using this screening technique, any source outside of the significant impact area is excluded from the inventory if the entire facility's emissions (tpy) are less than 20 times the distance from the facility to the nearest edge of the impact area (km).[44] So that the list of sources used in the NAAQS analysis also encompasses regional sources identified as Increment consuming, the facilities specifically identified as Increment consuming by Georgia EPD were included in the NAAQS analysis inventory even though application of the "20D" rule would have excluded some of these sources from the analysis, or if they were not listed in the 2002 operations inventory.

Using this approach, all but three facilities were excluded for each of the PM_{10} and NO_X PSD Increment analyses, and all but eight facilities were excluded for each of the PM_{10} and NO_X NAAQS analyses. The location of these facilities is shown on Figure E-13 and the source parameters are shown in Tables E-1 and E-2 of Appendix E to this report.

[43] PSD Increment affecting source inventories were obtained from Georgia EPD's website and through personal communication between Mr. Jim Stogner (Georgia EPD) and Mr. Ryan Gesser (Trinity) on September 28, 2004.

[44] *Federal Register* 8079, March 6, 1992.

TABLE 6-7. REGIONAL SOURCE INVENTORY

Source	County	PSD Increment Source?
Georgia Ductile Foundries, LLC	Crisp	Yes
Signature Finishers, LLC	Crisp	Yes
Langdale Forest Products	Dodge	Yes
Georgia-Pacific Corp Resins	Dooly	No
Coats & Clark Inc. Albany	Dougherty	Yes
Cooper Tire & Rubber Co Inc.	Dougherty	Yes
Georgia-Pacific Corporation	Dougherty	Yes
Louis Dreyfus Energy	Dougherty	No
M&M-Mars	Dougherty	Yes
Marine Corps Logistics Base	Dougherty	Yes
Merck & Co. Inc	Dougherty	No
Miller Brewing Company	Dougherty	Yes
Mitchell	Dougherty	No
Phillips Pipe Line	Dougherty	No
Procter & Gamble Paper Products Co.	Dougherty	Yes
Reeves Construction Company 1	Dougherty	Yes
Williams Energy Ventures Inc.	Dougherty	No
Anchor Glass Co. Inc. Plant 14	Houston	No
Cermex	Houston	Yes
Crown Beverage Packaging	Houston	No
Frito-Lay, Inc.	Houston	Yes
Georgia Power Company Robins	Houston	Yes
Medusa Cement Co.	Houston	No
Mid-Georgia Cogen, L.P.	Houston	Yes
Robbins Air Force Base	Houston	Yes
Shepherd Construction Co., Inc.	Houston	Yes
C-E Minerals Plant 5	Macon	No
Chargrill, Inc.	Macon	Yes
Georgia Dept. of Transportation	Macon	No
Unimin Corporation	Marion	No
Weyerhaeuser Company Flint River Plant	Macon	Yes
Blue Bird Body Co.	Peach	No
C-E Minerals Plant 1	Sumter	No
C-E Minerals Plant 2	Sumter	No
Davidson Exterior Trim	Sumter	No
Farmers Peanut and Cotton Exchange	Sumter	Yes
Mullite Company of America	Sumter	Yes
Reeves Construction Company 2	Sumter	Yes
Royster-Clark Agribusiness	Sumter	Yes
ITT Rayonier Inc.	Telfair	No
Duke Energy Tift, LLC	Tift	Yes
Reeves Construction Company 5	Tift	No
Tolleson Lumber Co. Inc	Webster	Yes
Oxford Const Co.	Webster	No
Crisp County Power Plant	Worth	No

6.3.5 AMBIENT MONITORING REQUIREMENTS

The impacts quantified in the Significance Analysis for NO_2, PM_{10}, and CO are compared with monitoring *de minimis* concentrations to determine if ambient monitoring requirements need to be considered as part of this permit action. This comparison is shown in Table 6-8.

TABLE 6-8. COMPARISON OF MONITORING *DE MINIMIS* CONCENTRATIONS TO AMBIENT IMPACTS CALCULATED IN THE SIGNIFICANCE ANALYSES.

Pollutant	Averaging Period	Highest Off-Site Impact* (μg/m³)	Monitoring *De Minimis* Concentration (μg/m³)
NO_2	Annual	6.5	14
PM_{10}	24-hour	19.1	10
CO	8-hour	75.6	575

* Highest ground-level, off-site concentration calculated in the Modeling Significance Analysis.

In cases where the existing ambient concentration or the modeled impact from an emissions increase is less than the Monitoring *de minimis* Concentrations, the permitting agency has the discretionary authority to exempt an applicant from performing pre-construction ambient monitoring.[45] For NO_2 and CO the highest ambient impact due to the Cordele OSB Mill Expansion Project does not exceed the Monitoring *De Minimis* Concentration. However, the modeled concentration of PM_{10} does exceed the Monitoring *De Minimis* Concentration.

Norbord requests that Georgia EPD waive the pre-construction monitoring requirements of 40 CFR §52.21(m) for this project. Ambient monitoring data are already available from Georgia EPD-run monitoring stations located in Georgia. The data from these monitors provide reasonable (or in some cases conservative) estimates of the background pollutant concentrations of PM_{10} and the other pollutants considered in this analysis.

Georgia EPD indicated that an appropriate background level for NO_X is 27 μg/m³. This value is based on data observed at the Conyers Monastery in Rockdale County, Georgia during 1996-2000. For PM_{10}, Georgia EPD recommends state-wide average values of 38 μg/m³ and 20 μg/m³ for 24-hour and annual averaging periods, respectively.[46] These background levels were included in the NAAQS analysis as described in the following section.

[45] 40 CFR §52.21(i)(5)

[46] Personal communication from Mr. Jim Stogner (Georgia EPD) to Mr. Ryan Gesser (Trinity), September 22, 2004.

6.4 NAAQS ANALYSIS RESULTS

The Norbord Georgia OSB Mill emissions modeled are those based on proposed federally enforceable emissions limits requested in the application (i.e., BACT limits) and potential emission rates for units not covered by federally enforceable limitations. Potential emissions from each source are detailed in the emissions inventory in Section 3 of this report.

The results of the NO_2 NAAQS analysis are shown in Table 6-9. This table lists the impacts of NO_2 due to all Cordele OSB Mill and significant regional inventory sources. The highest annual average impact among all receptors is shown for each year. Note that as discussed in Section 6.1.2, compliance with the NO_2 NAAQS at each receptor is demonstrated by comparing the highest impact of all five years to the corresponding standard. A plot depicting the impacts calculated in the NAAQS analysis at each receptor in the vicinity of the Cordele OSB Mill is provided in Figure E-14 of Appendix E. Since the highest annual average impact at all receptors within the Norbord Georgia OSB Mill significant impact area is less than the corresponding NAAQS, compliance is demonstrated.

TABLE 6-9. RESULTS OF THE NO_2 NAAQS ANALYSIS

Pollutant	Averaging Period	Met Year	UTM East (km)	UTM North (km)	Max Impact (μg/m^3)	Impact with Background (μg/m^3)	NAAQS (μg/m^3)	Exceeds NAAQS?
NO_2	Annual	1984	235.331	3,539.979	10.24	37.24	100	No
		1985	235.331	3,539.979	9.74	36.74	100	No
	Background	1986	235.331	3,539.979	9.63	36.63	100	No
	Concentration	1987	235.331	3,539.979	9.33	36.33	100	No
	(μg/m^3)	1988	235.283	3,539.993	9.60	36.60	100	No
	27	Maximum	235.331	3,539.979	10.24	37.24	100	No

The results of the PM_{10} NAAQS analysis are shown in Table 6-10. This table lists the impacts of PM_{10} due to all Cordele OSB Mill and significant regional inventory sources. The highest annual average impact and H2H 24-hour impact among all receptors is shown for each year. As discussed in Section 6.1.2, compliance with the PM_{10} NAAQS at each receptor is demonstrated by comparing the highest impact of all five years to the corresponding standard. A plot depicting the impacts calculated in the NAAQS analysis at each receptor in the vicinity of the Cordele OSB Mill is provided in Figures E-15 and E-16 of Appendix E for the 24-hour and annual averaging periods, respectively.

TABLE 6-10. RESULTS OF THE PM_{10} NAAQS ANALYSIS

Pollutant	Averaging Period	Met Year	All Receptors UTM East (km)	UTM North (km)	Design Impact* ($\mu g/m^3$)	Impact with Background ($\mu g/m^3$)	Significant Receptors UTM East (km)	UTM North (km)	Design Impact* ($\mu g/m^3$)	Impact with Background ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
PM_{10}	24-hour	1984	233.000	3,560.500	311.88	349.88	235.617	3,539.891	25.54	63.54	150
		1985	233.000	3,560.500	314.25	352.25	235.700	3,539.500	28.57	66.57	150
	Background	1986	233.000	3,560.500	284.87	322.87	235.617	3,539.891	26.71	64.71	150
	Concentration	1987	233.000	3,560.500	325.71	363.71	235.700	3,539.500	25.32	63.32	150
	($\mu g/m^3$)	1988	233.000	3,560.500	436.50	474.50	235.600	3,539.500	27.22	65.22	150
	38	Maximum	233.000	3,560.500	436.50	474.50	235.700	3,539.500	28.57	66.57	150
PM_{10}	Annual	1984	233.000	3,560.500	47.14	67.14	235.331	3,539.979	7.627	27.63	50
		1985	233.000	3,560.500	42.57	62.57	235.331	3,539.979	7.290	27.29	50
	Background	1986	233.000	3,560.500	39.53	59.53	235.331	3,539.979	7.466	27.47	50
	Concentration	1987	233.000	3,560.500	43.36	63.36	235.331	3,539.979	7.229	27.23	50
	($\mu g/m^3$)	1988	233.000	3,560.500	57.34	77.34	235.331	3,539.979	7.430	27.43	50
	20	Maximum	233.000	3,560.500	57.34	77.34	235.331	3,539.979	7.627	27.63	50

* Design impact denotes the highest, second-high concentration for the 24-hour averaging period and annual average result for the annual averaging period.

Figures E-15 and E-16 illustrate that the exceedances of the applicable PM_{10} NAAQS predicted by the modeling analysis are associated with a particular regional source included in the inventory. To confirm that the Cordele OSB Mill neither causes nor contributes to these exceedance events, Figures E-15 and E-16 illustrate the 24-hour and annual average impacts, overlaid with the maximum contribution from sources at the Cordele OSB Mill. Since Norbord's maximum contribution never exceeds the applicable modeling significance levels (i.e., 5 $\mu g/m^3$ for the 24-hour averaging period and 1 $\mu g/m^3$ for the annual averaging period) at these receptors, the facility is determined to neither cause nor contribute to any exceedances. This determination is consistent with U.S. EPA's guidance for assessing source contributions, which states:

> *The [evaluation] determines whether the emissions from the proposed source will have a significant ambient impact at the point of the modeled NAAQS or increment violation when the violation is predicted to occur. If it can be demonstrated that the proposed source's impact is not "significant" in a spatial and temporal sense, then the source may receive a PSD permit… [EPA believes] the most appropriate course of action to follow is the … approach which considers the significant impact of the source in a way that is spatially and temporally consistent with the predicted violations.*[47]

Because the 24-hour and annual average PM_{10} impacts are below the applicable NAAQS at all receptors within the radius of significant impact, compliance is demonstrated.

[47] U.S. EPA Memorandum from Mr. Gerald Emision (OAQPS) to Mr. Thomas Maslany (Air Management Division) dated July 5, 1988.

6.5 PSD INCREMENT ANALYSIS RESULTS

All emissions sources at the Cordele facility were included in the PSD Increment analysis since the facility was initially constructed after the applicable baseline dates. The results of the NO_2 PSD Increment analysis are given in Table 6-11. This table lists the highest annual average NO_2 concentration calculated among all receptors in the Cordele OSB Mill significant impact area for each year of meteorological data evaluated. A plot depicting the impacts calculated in the NAAQS analysis at each receptor in the vicinity of the Cordele OSB Mill is provided in Figure E-19 of Appendix E. Since the highest annual average impact at all receptors within the Cordele OSB Mill significant impact area is less than the corresponding PSD Increment, the Cordele OSB Mill Expansion Project and all other increment-affecting sources at the Cordele facility and affecting its significant impact area will not consume more than the available PSD Increment.

TABLE 6-11. RESULTS OF THE NO_2 PSD INCREMENT ANALYSIS

Pollutant	Averaging Period	Met Year	UTM East (km)	UTM North (km)	Max Impact ($\mu g/m^3$)	PSD Increment ($\mu g/m^3$)	Exceeds Increment?
NO_2	Annual	1984	235.331	3,539.979	10.07	25	No
		1985	235.331	3,539.979	9.59	25	No
		1986	235.331	3,539.979	9.44	25	No
		1987	235.331	3,539.979	9.15	25	No
		1988	235.283	3,539.993	9.44	25	No
		Maximum	235.331	3,539.979	10.07	25	No

The results of the PM_{10} PSD Increment analysis are given in Table 6-12. This table lists the highest annual average and H2H 24-hour average PM_{10} concentration calculated among all receptors in the Cordele OSB Mill significant impact area for each year of meteorological data evaluated. A plot depicting the impacts calculated in the NAAQS analysis at each receptor in the vicinity of the Cordele OSB Mill is provided in Figure E-18 and E-19 of Appendix E for the 24-hour average and annual average impacts, respectively. Since the highest annual average and H2H 24-hour average impact at all receptors within the Cordele OSB Mill significant impact area is less than the corresponding PSD Increment, the Cordele OSB Mill expansion project and all other increment-affecting sources at the Cordele facility and affecting its significant impact area will not consume more than the available PSD Increment.

TABLE 6-12. RESULTS OF THE PM_{10} PSD INCREMENT ANALYSIS

Pollutant	Averaging Period	Met Year	UTM East (km)	UTM North (km)	Design Impact* ($\mu g/m^3$)	PSD Increment ($\mu g/m^3$)	Exceeds Increment?
PM_{10}	24-hour	1984	235.617	3,539.891	25.54	30	No
		1985	235.700	3,539.500	29.00	30	No
		1986	235.617	3,539.891	26.72	30	No
		1987	235.700	3,539.500	25.70	30	No
		1988	235.600	3,539.500	28.03	30	No
		Maximum	235.700	3,539.500	29.00	30	No
PM_{10}	Annual	1984	235.331	3,539.979	7.82	17	No
		1985	235.331	3,539.979	7.51	17	No
		1986	235.331	3,539.979	7.69	17	No
		1987	235.331	3,539.979	7.45	17	No
		1988	235.331	3,539.979	7.64	17	No
		Maximum	235.331	3,539.979	7.82	17	No

* Design impact denotes the highest, second-high concentration for the 24-hour averaging period and annual average result for the annual averaging period.

6.6 ADDITIONAL IMPACTS ANALYSIS

PSD regulations require that three additional impact analyses be performed as part of a PSD permit action. These evaluations include a growth analysis, a soil and vegetation analysis, and a visibility analysis. No adverse impacts on growth are anticipated from the Cordele OSB Mill Expansion Project since all construction activities will occur for a finite time period on existing facilities located within the previously disturbed and currently maintained areas of the mill that Norbord already owns.

The modeling results from the PSD NAAQS are assessed against the secondary NAAQS standard for NO_2 (i.e., 100 $\mu g/m^3$ on an annual average basis, equivalent to the primary NAAQS) and PM_{10} (i.e., 50 $\mu g/m^3$ on an annual average basis and 150 $\mu g/m^3$ on an 24-hour average basis, equivalent to the primary NAAQS), which provide protection for public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. This analysis includes emissions from all existing sources and significant regional sources, not only those associated with the Norbord Georgia OSB Mill Expansion Project. Because predicted impacts in the NAAQS analysis are below the secondary NAAQS level for NO_2, Norbord contends that no adverse impacts on soils or vegetation will result.

Georgia's SIP and GRAQC provide no specific prohibitions against visibility impairment other than regulations limiting source opacity and protecting visibility at federally protected Class I areas, pursuant to Rule 391-3-1-.02(uu) *Visibility Protection*. All sources at the Cordele OSB Mill will maintain compliance with applicable opacity restrictions through the use of BACT on sources of particulate matter to achieve and maintain compliance with applicable emissions standards for particulate matter and opacity pursuant to NSPS and Georgia Rules 391-3-1-.02(b) *Visible Emissions*, (d) *Fuel Burning Equipment*, and (e) *Particulate Emissions from Manufacturing Processes*. Visibility protection at the nearest Class I area, Okefenokee, will be demonstrated in a regional haze analysis conducted using the CALPUFF model, as described in Section 6.8 of this report and submitted to the Federal Land Manager under separate cover.

The primary variables that affect whether a plume is visible or not at a certain location are (1) quantity of emissions, (2) types of emissions, (3) relative location of source and observer, and (4) the background visibility range. To assess potential plume impairment, Norbord utilized the U.S. EPA VISCREEN model following the guidelines published in the *Workbook for Plume Visual Impact Screening and Analysis*.[48] The VISCREEN model is designed specifically to determine whether a plume from a facility may be visible from a given vantage point. In addition to particulate emissions and opacity control, to otherwise demonstrate that visibility impairment will not result from continued operation of the Cordele OSB Mill, the VISCREEN model was applied at a sensitive receptor located within the 12.3 km significant impact area determined in the PSD Significance Analysis. Areas that are typically considered sensitive receptors include regional, national, or international airports, state parks or forests, or national parks or forests that are not designated federal Class I areas. One such sensitive receptor, the Georgia Veterans State Park, was identified as being located within the project's significant impact area.

In the visibility analysis, the PM_{10} and NO_X emission increases associated with the expansion project were used as inputs to the model. The Level-1 input screening parameters were not adequate for the analysis, therefore a Level-2 analysis was conducted for certain parameters as generally described in the VISCREEN user's manual. For the Level-2 analysis, the worst case meteorological conditions were determined by creating a joint frequency distribution of atmospheric stability and wind speeds during daylight hours for the five year data period 1984 through 1988 from observations at Macon, Georgia. This analysis indicated the combination of atmospheric stability and wind speed conditions, D stability and 3 mm/s winds, most likely to occur when the wind direction is such that plume impairment would potentially occur.

As an additional refinement to the Tier-2 screening analysis, the NO_X emission rate was scaled by 75% following the Ambient Ratio Method to account for the conversion of NO_X to NO_2 in the atmosphere, since the latter is the visibility impairing species. The background ozone concentration was input as 27 ppb, representing the three-year average between October 2000 and September 2003 of year-round ozone measurements taken as part of the Fall Line Air Quality Study at Sandy Beach Park in Macon.[49] All other inputs were input as Level-1 default options. As directed in the *Workbook*, a background visual range of 25 km is used for the area of middle Georgia where Cordele is located. A summary of the input parameters is presented in Table 6-13.[50]

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[48] U.S. Environmental Protection Agency, *Workbook for Plume Visual Impact Screening and Analysis*, EPA-450/4-88-015, 1988.

[49] http://cure.eas.gatech.edu/faqs/

[50] U.S. Environmental Protection Agency, *Tutorial Package for the VISCREEN Model*, U.S. EPA OAQPS, Research Triangle Park, NC, June 1992.

TABLE 6-13. INPUTS TO THE VISCREEN MODEL FOR THE PLUME VISIBILITY ANALYSIS

Parameter	Input Value
Particulate Emission Rate	197 tpy
NO_X (as NO_2) Emission Rate	325 tpy
Background ozone	0.027 ppm
Plume-source-observer angle	11.25°
Source-observe distance	10.25 km
Minimum Source-Area Distance	10.25 km
Maximum Source-Area Distance	12.25
Background visual range	25 km

For views at the area selected, calculations are performed by the model for two assumed plume-viewing backgrounds: the horizon sky and a dark terrain object. VISCREEN assumes that the terrain object is black and located adjacent to the plume on the side of the centerline opposite the observer. The VISCREEN model output shows separate tables for inside and outside of the sensitive area. Each table contains several variables: theta, azi, distance, alpha, critical and actual plume ΔE, and critical and actual plume contrast. These variables are defined as:

1. *Theta* - Scattering angle (the angle between direction solar radiation and the line of sight). If the observer is looking directly at the sun, theta equals zero degrees. If the observer is looking away from the sun, theta equals 180 degrees.
2. *Azi* - The azimuthal angle between the line connecting the observer and the line of sight.
3. *Alpha* - The vertical angle between the line of sight and the plume centerline.
4. ΔE - Used to characterize the perceptibility of a plume on the basis of the color difference between the plume and a viewing background. A ΔE less than 2.0 signifies that the plume is not perceptible.
5. *Contrast* - The contrast at a given wavelength of two colored objects such as plume/sky or plume/terrain.

The analysis is considered satisfactory if ΔE and *Contrast* are less than critical screening values of 2.0 and 0.05, respectively. Note that these thresholds are applied in this analysis, even though screening criteria are properly applied at Class I areas, not sensitive receptors located in Class II areas. As illustrated in Figure 6-6, the results of the VISCREEN analysis show that the screening criteria are not exceeded inside the Georgia Veterans State Park. Note that only results "inside" the receptor area are considered in this analysis, since results "outside" the areas corresponding to integral vistas are not protected under Georgia's SIP for Class II areas.

FIGURE 6-6. VISCREEN ANALYSIS SUMMARY

```
Visual Effects Screening Analysis for Source:
Cordele OSB Mill
Class I Area: Ga Veterans State Park

*** User-selected Screening Scenario Results ***
Input Emissions for

    Particulates   197.00  TON/YR
    NOx (as NO2)   325.00  TON/YR
    Primary NO2       .00  TON/YR
    Soot              .00  TON/YR
    Primary SO4       .00  TON/YR

              PARTICLE CHARACTERISTICS
              Density       Diameter
              =======       ========
 Primary Part.     2.5           6
 Soot              2.0           1
 Sulfate           1.5           4

              Transport Scenario Specifications:

     Background Ozone:                  .03 ppm
     Background Visual Range:         25.00 km
     Source-Observer Distance:        10.25 km
     Min. Source-Class I Distance:    10.25 km
     Max. Source-Class I Distance:    12.25 km
     Plume-Source-Observer Angle:     11.25 degrees
     Stability:   4
     Wind Speed:   3.00 m/s
```

```
                          R E S U L T S

 Asterisks (*) indicate plume impacts that exceed screening
criteria

          Maximum Visual Impacts INSIDE  Class I Area
           Screening Criteria ARE NOT Exceeded
                                     Delta E      Contrast
                                   ===========  ============
Backgrnd Theta Azi Distance Alpha Crit  Plume   Crit  Plume
======== ===== === ======== ===== ====  =====   ====  =====
 SKY      10. 126.   12.3    42.  4.60   .397    .07   .003
 SKY     140. 126.   12.3    42.  2.00   .134    .07  -.003
 TERRAIN  10.  84.   10.3    84.  4.72   .535    .10   .005
 TERRAIN 140.  84.   10.3    84.  2.00   .077    .10   .002

          Maximum Visual Impacts OUTSIDE Class I Area
              Screening Criteria ARE Exceeded
                                     Delta E      Contrast
                                   ===========  ============
Backgrnd Theta Azi Distance Alpha Crit  Plume   Crit  Plume
======== ===== === ======== ===== ====  =====   ====  =====
 SKY      10.   1.    1.0   168.  2.00 1.789     .05   .018
 SKY     140.   1.    1.0   168.  2.00  .311     .05  -.012
 TERRAIN  10.   1.    1.0   168.  2.00 2.472*    .05   .031
 TERRAIN 140.   1.    1.0   168.  2.00  .564     .05   .025
```

6.7 AMBIENT IMPACT ASSESSMENT OF TOXIC AIR POLLUTANT EMISSIONS

This evaluation of ambient impacts of toxic pollutant emissions is submitted in accordance to the *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*, Revised June 21, 1998, which was issued by the Georgia EPD Air Protection Branch pursuant to the provisions of GRAQ 391-3-1-.02(2)(a)3.(ii).

According to the *Guideline*, dispersion modeling should be completed for potentially toxic pollutants having quantifiable emission increases. The *Guideline* infers that a pollutant is identified as a toxic pollutant if any of the following toxicity-determined values have been established for that pollutant:

- U.S. EPA Integrated Risk Information System (IRIS) reference concentration (RfC) or unit risk;
- Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL);
- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV);
- National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL); and,
- Lethal Dose – 50% (LD50) Standards.

For the proposed expansion project to the Cordele OSB Mill, Norbord quantified emissions of three toxic pollutants emitted from the new equipment in significant amounts: formaldehyde, methanol, and phenol. Table 6-14 summarizes facility-wide emissions of these pollutants.

TABLE 6-14. FACILITY-WIDE EMISSIONS OF POTENTIALLY TOXIC AIR POLLUTANTS

	Stack ID	Source ID	APC ID	Future Potential Emissions HCHO (tpy)	Phenol (tpy)	MeOH (tpy)	HAP (tpy)
Current Sources	S001	WESP (Dryers)	WP01	63.0	1.82	14.0	112
	S003	System #1	BH03	0.3	--	26.0	26.3
	S004	System #2	BH04	0.15	--	8.00	8.15
	S010	High Pressure Waste System Baghouse	BH10	0.05	--	0.02	0.07
	S011	T&G Sander System Baghouse	BH11	--	--	--	--
	S012	T&G Saw Line System Baghouse	BH12	--	--	--	--
	S013	Globe Line Saw System Baghouse	BH13	--	--	--	--
	S043	Dry Fuel Storage Silo Baghouse	BH43[1]	--	--	--	--
	S063	RTO (Press)	RT63	2.20	5.80	4.00	12.2
Proposed Sources	S201	Dryer Exhaust ([W]ESP/TO)	C201[2]	20.4	7.5	2.9	43.4
	S202	Press Exhaust (TO)	C202	2.23	10.4	13.0	28.5
	S203	Resinated Fines Baghouse	C203	1.17	--	38.1	39.2
	S204	Unresinated Fines Baghouse	C204	0.78	--	23.0	23.8
	S205	Finishing Line Baghouse	C205	0.85	--	2.5	3.32
	S206	Wet Strand Fines Baghouse	C206	0.26	--	0.6	0.82
	S207	Dry Fuel Bin Baghouse	C207	0.10	--	0.5	0.59
	S208	Blowline Baghouse	C208	--	--	--	--
	Facility Wide Total			91	25.5	133	298.4

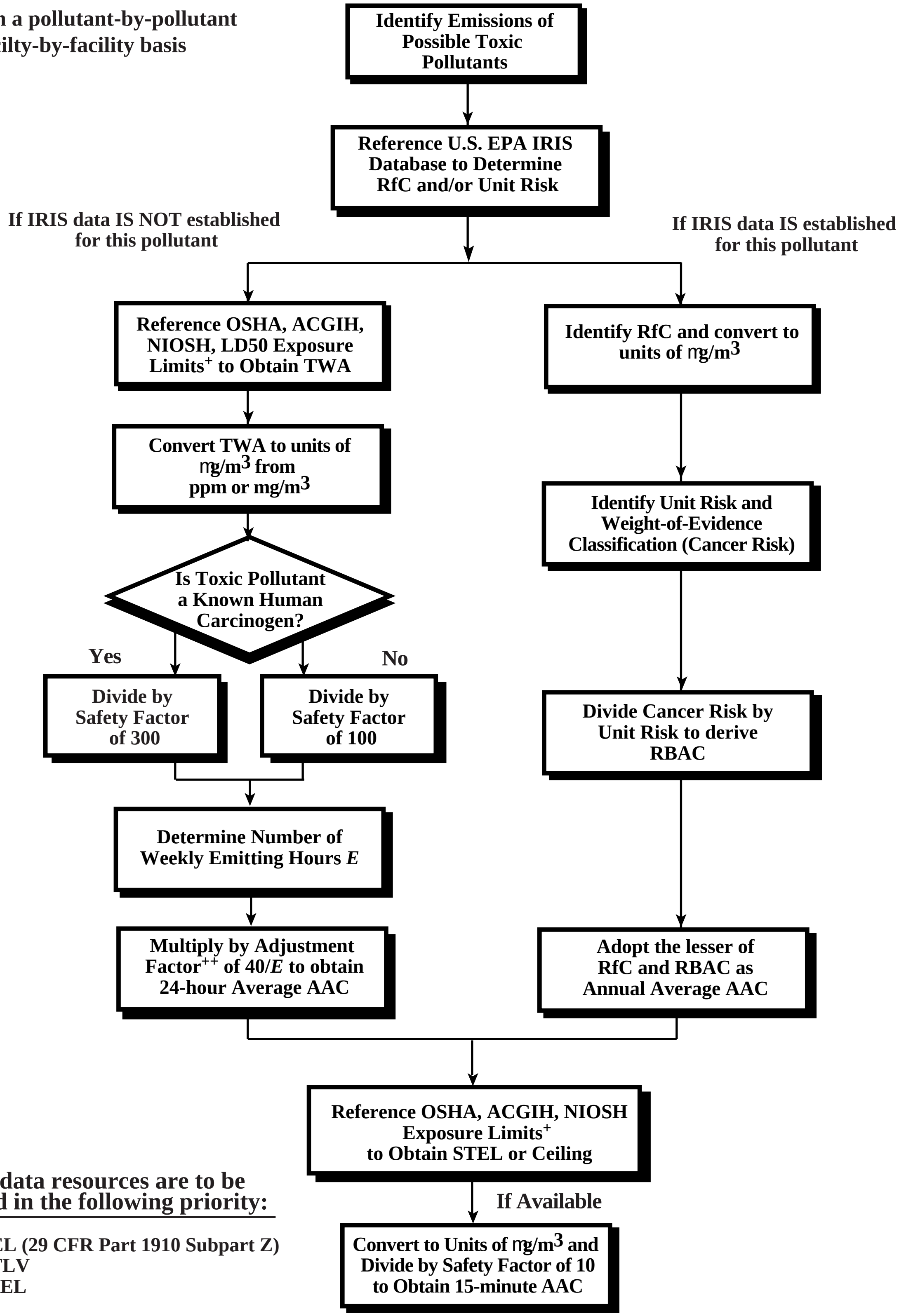
1. The current Dry Fuel Storage Silo Baghouse (BH43) will be replaced by a similar unit (C207) as part of the 2005 expansion project.
2. Final design configuration will include either a wet or dry ESP prior to the TO.

The *Guideline* specifies that the resources should be referenced in the priority schedule listed above to determine long-term and short-term acceptable ambient concentration (AAC) based on the exposure limits that are provided for each pollutant. A schematic diagram of this procedure is provided in Figure 6-7.

The AAC for each toxic pollutant is calculated from the toxicity data presented in the resources listed above. For any pollutant, both a long-term and short-term AAC might be calculated. If a pollutant has a RfC and/or unit risk, an annual average (long-term) AAC can be calculated as follows. The RfC is an estimate of daily inhalation exposure that is likely to be without an appreciable risk of deleterious effects during a lifetime. The unit risk is a quantitative assessment of cancer-causing potential per concentration of air inhaled. An annual average AAC is obtained by dividing the unit risk by a cancer risk factor based on the weight-of-evidence classification, i.e., 1:1,000,000 for known carcinogens (class A), 1:100,000 for probable carcinogens (class B), and 1:10,000 for suspected carcinogens (class C). The resultant is an annual average AAC in units of micrograms per cubic meter ($\mu g/m^3$). RfC values are given in units of milligrams per cubic meter (mg/m^3) and require no conversion.

Determination of Ambient Standards for Toxic Air Pollutant Modeling in Georgia

Apply on a pollutant-by-pollutant AND facilty-by-facility basis



+Toxicity data resources are to be referenced in the following priority:

1. OSHA PEL (29 CFR Part 1910 Subpart Z)
2. ACGIH TLV
3. NIOSH REL
4. LD50

Each resource should be referenced to obtain an AAC for all applicable averaging periods.

++Weekly Emitting Hours may be less than the potential 168 for batch processes or when an enforceable limitation on operating hours is established. If Weekly Emitting Hours are less than 40, Adjustment Factor is 1.

*This applicability flowchart can be used as a guide but not an absolute means of determining ambient thresholds for toxic pollutants. One should refer to Georgia's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions* to make a final determination and for dispersion modeling procedures.

Trinity Consultants

Georgia Air Toxics Modeling Guideline
Revised June 21, 1998

Determination of Ambient Standards*

If RfC and unit risk data are not available in the IRIS database, then an annual standard cannot be calculated and a 24-hour AAC must be derived. The bases for the 24-hour standards are the OSHA PEL given at 29 CFR Part 1910 Subpart Z, followed in priority by the ACGIH TLV, NIOSH REL, and LD50 databases. These resources provide exposure limits as time-weighted averages (TWA) in terms of occupational exposure duration (i.e., typically an 8-hour average). If a TWA value is provided for a given pollutant, the 24-hour average AAC is derived as follows. First, an adjustment factor (i.e., 40 divided by the total weekly emitting hours) is applied to the TWA to account for exposure in excess of occupational duration. This adjustment factor is assumed to be 168 hours per week for continuous operation. Second, the adjusted TWA is divided by a safety factor to account for human carcinogenity: 100 for pollutants that are not known human carcinogens, 300 for pollutants that are known human carcinogens. The resultant value is adopted as a 24-hour AAC.

An additional standard must be met if a given pollutant has listed a Short Term Exposure Limit (STEL) or Ceiling (C) in any one of the above-named resources. A STEL is a 15-minuted weighted average concentration that should not be exceeded at any time during the workday. A C value is a concentration that should not be exceeded at any time during occupational exposure. These values have been established for pollutants that are acute sensory irritants and apply as a 15-minute standard, also adjusted by a safety factor of 10. No adjustment factor is applied to STEL or C values. A 15-minute average standard, if applicable, must be met in addition to an annual average and/or 24-hour average standard. The *Guideline* clearly states that each of annual, 24-hour, and 15-minute AAC should be derived if the appropriate toxicity information is provided in any of the listed resources.

The data resources specified by Georgia EPD were referenced to determine the applicable AAC standards for toxic pollutants identified as being emitted from the Cordele facility. Table E-4 in Appendix E summarizes the long-term (annual average) and short-term (24-hour or 15-minute average) standards that must be met.

For the Cordele OSB Mill expansion project, dispersion modeling was conducted using a similar refined modeling approach to the PSD modeling analyses, with a few exceptions. The ISCST3 model was used in the toxic pollutants ambient impact assessment. One difference between the toxic air pollutant analysis and the PSD modeling analyses is that Georgia EPD does not require building downwash to be modeled as part of the modeling evaluation because of adequate safety factors incorporated in the AAC derivation scheme. Therefore, downwash was disabled from the ISCST3 model, making the numerical simulation identical to using ISC-PRIME. To obtain 15-minute average impacts, model output of 1-hour average concentrations was multiplied by the conversion factor of 1.32 specified by Georgia EPD. Table 6-15 summarizes the results of this analysis.

TABLE 6-15. SUMMARY OF TOXIC AIR POLLUTANT ASSESSMENT

Pollutant	Annual Average AAC ($\mu g/m^3$)	Annual Average Impact ($\mu g/m^3$)	24-hour Average AAC ($\mu g/m^3$)	24-hour Average Impact ($\mu g/m^3$)	15-minute Average AAC ($\mu g/m^3$)	15-minute Average Impact* ($\mu g/m^3$)
Formaldehyde	0.8	0.59	-		245	21.8
Methanol	-		619	72.3	3,280	444
Phenol	-		45.2	0.93	6,000	3.90

* Impact for the 15-minute averaging period computed as maximum 1-hr average result multiplied by a factor of 1.32 per the Georgia Toxics Modeling Guideline.

Predicted ambient concentrations are below applicable AAC for all pollutants and averaging periods modeled. Therefore, emissions of these toxic air pollutants are not anticipated to cause adverse impacts on the ambient environment.

6.8 CLASS I AREA INCREMENT AND AQRV ANALYSES

Federal Class I areas are areas of special national or regional value from a natural, scenic, recreational, or historic perspective. These areas were established as part of the PSD regulations included in the 1977 Clean Air Act Amendments. Class I areas are afforded the highest degrees of protection among the types of areas classified under the PSD regulations. Class I areas are protected through two distinct analyses: Class I Increments and Air Quality Related Values (AQRV). For facilities that are located within 100 km of a Class I area, impacts on PSD Increment are assessed by the state permitting authority, which is Georgia EPD for this analysis. Impacts on AQRV are evaluated by the Federal Land Manager responsible for the Class I area that could be affected by the proposed project.

The nearest Class I area to the Cordele OSB Mill is the Okefenokee National Wildlife Refuge. Okefenokee is located approximately 170 km southeast of the Cordele OSB Mill and is managed by the U.S. Fish & Wildlife Service (FWS). The location of Okefenokee with respect to the Cordele OSB Mill is illustrated in Figure E-18 of Appendix E. For facilities like the Cordele OSB Mill that are located more than 100 km from the nearest Class I area, Georgia EPD typically defers a review of the project impacts to the discretion of the Federal Land Manager, the FWS. Accordingly, Norbord has prepared a Class I area modeling analysis submitted under separate cover to the FWS demonstrating that the proposed construction and operation of the Cordele OSB Mill would not cause a significant impact on regional haze or deposition at Okefenokee. The modeling analysis and report will be submitted directly to USFW under separate cover and will be provided to Georgia EPD for reference.

Through its association with the Southern Appalachian Mountains Initiative (SAMI), Georgia EPD has committed to improve communications and cooperation with Federal Land Managers during the review of PSD permit applications. In 1997, a Class I Project Information Form was developed by Georgia and other member states for applicants to submit as part of PSD permit actions. The intent is for this form to be submitted to U.S. EPA Region 4, where it will be posted on Region 4's web site for review by FLM as needed. A completed Class I Area Project Information Form for the Norbord Georgia OSB Mill Expansion Project is provided in the back of Appendix A of this application, behind the Georgia air permit application forms.

APPENDIX A

PERMIT APPLICATION FORMS

State of Georgia
Department of Natural Resources
Environmental Protection Division
Air Protection Branch

Atlanta Tradeport, Suite 120
4244 International Parkway
Atlanta, Georgia 30354
404/363-7000
Fax: 404/363-7100

Application for Permit to Construct, Modify or Operate Process Equipment, Fuel Burning Equipment And/Or Air Pollution Control Devices

SECTION 1 – GENERAL INFORMATION

AIRS No. (if known): 04-13-08100054
Facility Name: Norbord Georgia OSB
Facility Location: 964 Highway 280 West (street address)
City, State Zip: Cordele (city) Crisp (county) GA 31015 (zip)

Mailing Address: 964 Highway 280 West
City, State Zip: Cordele (city) GA (state) 31015 (zip)

For Use by EPD Only

Application No.:
Permit No.:
Date Approved:
AIRS # Assigned:
Reviewer:

Parent/Holding Company: Norbord Georgia, Inc.

Contact for Application: Phillip Towles **Title:** Regional Environmental Coordinator

Tel No.: (864) 697-5438 **Ext:** 112 **Fax No.:** (864) 697-4529

Email address: Phillip.Towles@Joanna.Norbord.com

Instructions for each section of this application are found within that section. Please review and follow all instructions carefully to avoid the necessity for resubmission. Feel free to submit additional details as needed. All supplemental and supporting data or information hereafter submitted and all representations hereafter made to EPD with respect to the proposed facility will be construed as part of this application. If there are specific questions or sections that are not understood, please call (404) 363-7000 for assistance. If an operating permit has already been received or applied for, it is only necessary to complete Section 1 and any other section of the application associated with the modification or construction for which authorization is being requested. **Two (2) copies of the application, both bearing original signatures, must be submitted to the Air Protection Branch.**

A. This application is for:

- ☐ A permit to operate
- ☒ A permit to construct
- ☐ A permit to modify existing equipment
- ☐ A revision of data submitted in an earlier application

Date and Application Number of previously submitted application: ______

B. Type of Equipment for which Application is being Submitted:

- ☐ An entire facility
- ☒ Process equipment
- ☒ Fuel burning equipment
- ☒ Air pollution control equipment
- ☐ An incinerator only
- ☐ Other → Specify: ______

C. Has this operation/equipment been previously permitted? ☐ - Yes ☒ - No

If above response is "Yes," provide the related permit number: ______ Date issued: ______

D. If this application is for new construction or modification, give best estimates of the following dates:

Starting Date: IQ 2005 Completion Date: 3Q 2005

If this is a major modification or construction project, attach details of intermediate dates for completion of projects.

Section 1 Questions Continued On Next Page

This application is submitted in accordance with the provisions of the Georgia Rules for Air Quality Control and, to the best of my knowledge, is complete and correct. The following sections of the application are applicable and are included:

☒ 2A ☐ 2B ☒ 3A ☒ 3B ☐ 4A ☐ 4B ☐ 5 ☐ 6 ☒ 7 ☐ 8 ☒ 9 ☒ 10A ☒ 10B
☒ 11A ☒ 11B ☐ 11C ☒ 11D ☒ 11E

Name of Owner or Authorized Official: Jim Black **Title:** Vice President - Southern Operations

Signature: ______ **Date:** ______

Continues on next page

SECTION 1 – GENERAL INFORMATION (continued)

E. Is any information in this application considered Confidential Information?
If your response to this question is "yes", please refer to the latest version of EPD's *Procedures for Requesting that Submitted Information be treated as Confidential* for the necessary steps to be taken and for more information.

☐ - Yes ☒ - No

If yes, follow instructions provided in the attachment titled "Confidential Business Information."

F. Has a consultant been employed or will a consultant be employed for any part of this project, modification or construction?

☒ - Yes ☐ - No

If yes, provide the following information pertaining to the consultant employed:

Name of Consultant or Consulting Company: Trinity Consultants

Name of Contact: (if Consulting Company Used) Ryan Gesser

Mailing Address: 1100 Johnson Ferry Road, Suite 685

City, State Zip: Atlanta (City) GA (State) 30342 (Zip)

Telephone and Fax Number: (404) 256-1919 (Telephone & ext) (404) 256-1952 (Fax)

In what areas will the consultant be involved in the project, modification or construction?

Air quality analysis and PSD Permitting

G. Facility Location:

Latitude: ° ' " **NORTH** Longitude: ° ' " **WEST**

UTM Coordinates: 235,272 **EAST** 3,539,804;Z17 **NORTH**

INSTRUCTION: The SOURCE CODE of an emission unit or air pollution control device is an alphanumeric code with a maximum of four characters (e.g. 27, D1, AA, BLR2, 953). The source code is used to relate information given in different sections of the application. Source codes are unique to each piece of equipment at a facility; emission units, air pollution control devices, and stacks cannot share the same source code. The second columns in the tables in Sections 4A and 6 of the application refer back to the source codes used in Sections 2 and 3. Use the same source code throughout the application whenever giving data on the same piece of equipment. For example, B4 may refer to number 4 boiler, C4A and C4B may be control devices on number 4 boiler, and S4 might be the stack on the boiler and control devices. The actual selection of source codes is up to the applicant.

Unless previously submitted, the following three items must be included with all applications. If in doubt, resubmit. Place the number of attachments or date of original submittal in the spaces provided.

H. X — Attach a plot plan showing the location of the facility and points of discharge, identified by source code used in the application, in relation to the surrounding area. Plot plans should show roadways, residences and other permanent structures, the scale used and at least one set of longitude lines or UTM coordinates. In practice, many applicants find it convenient to show a sketch of the plant area on one plot and to locate the general plant site on a separate county or city map.

I. X — Attach a flow diagram identifying process and control equipment, where raw material enters processes, where waste exits, where emissions air emissions are generated and where finished products are handled. Each point should be identified according to the source codes used in the application in addition to its normal description.

J. X — In the space provided below, give a description of the general production process and the specific operation for which a permit is being requested. If necessary, attach additional sheets to give an adequate description. Include layout drawings, as necessary, to describe each process. Reference should be made to source codes used in the application.

K. Description of general production process and operation for which a permit is being requested:

See Application Narrative

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 2A – PROCESS DESCRIPTION AND OPERATIONAL DATA

Normal Operating Schedule: 24 hours/day 7 days/week 52 weeks/yr

Additional Data Attached? ☐ - Yes ☐ - No

Seasonal and/or Peak Operating Periods: N/A

Dates of Annually Occurring Shutdowns: N/A

PRODUCTION INPUT FACTORS

Source Code	Process/ Operation e.g. Chemical mix tank, Grain dryer, Conveyor	Date of Equipment installation	Type of Raw Material	Annual Input Tons/year	Hourly Process Input Rate (Give units: e.g. lb/hr, ton/hr)		
					Design	Normal	Maximum
ES02	Energy System B	See Section 111	See Section 111	See Section 111	See Section 111	See Section 111	See Section 111
RD05	Rotary Dryer #5	2005	Wood Flakes	151,667 - 455,000		34,667 - 104,000	lb/hr
RD06	Rotary Dryer #6	2005	Wood Flakes	151,667 - 455,000		34,667 - 104,000	lb/hr
RD07	Rotary Dryer #7	2005	Wood Flakes	151,667 - 455,000		34,667 - 104,000	lb/hr
DB05	Dry Bin #5	2005	Wood Flakes	214,000		50,000	lb/hr
DB06	Dry Bin #6	2005	Wood Flakes	214,000		50,000	lb/hr
DB07	Dry Bin #7	2005	Wood Flakes	214,000		50,000	lb/hr
OFS2	Dry Fuel Storage Silo #2	2005	Dry Wood	113,000		25,600	lb/hr
FLP2	Forming Line & Prepress #2	2005	Wood Flakes	3,000		700	lb/hr
GB05	Green Bin #5	2005	Wood Flakes	386,100		89,000	lb/hr
GB06	Green Bin #6	2005	Wood Flakes	386,100		89,000	lb/hr
GB07	Green Bin #7	2005	Wood Flakes	386,100		89,000	lb/hr
HPW2	High Pressure Waste System #2	2005	Wood Dust	81,000		18,500	lb/hr
L2SD	Line #2 Sander System	2005	Wood Dust/Chips	37,700		8,600	lb/hr
L2SS	Line #2 Saw System	2005	Wood Dust/Chips	37,700		8,600	lb/hr
PRS2	Press #2	2005	Treated Wood Flake	495,300		113,000	lb/hr
RS05	Rotary Screen #5	2005	Wood Flakes	213,500		50,000	lb/hr
RS06	Rotary Screen #6	2005	Wood Flakes	213,500		50,000	lb/hr
RS07	Rotary Screen #7	2005	Wood Flakes	213,500		50,000	lb/hr
FB05	Flake Blender #5	2005	Resin/Wood/ Wax	226,000		52,000	lb/hr
FB06	Flake Blender #6	2005	Resin/Wood/ Wax	226,000		52,000	lb/hr
FB07	Flake Blender #7	2005	Resin/Wood/ Wax	226,000		52,000	lb/hr

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 3A – BOILERS AND FUEL BURNING EQUIPMENT

Source Code	Emission Unit Type (e.g. Dryer, Boiler, Burner)	Name or Designation of Emission Unit (Give Mfg and Model No.)	Type of Burner* (e.g. Spreader stoker, Pulverized coal)	Type of Draft[1] (e.g. Natural, Induced, Balanced)	Capacity of Unit 10^6 Btu/hr Input		Percent Fuel for Space Heat	Percent Excess Air	Date of Construction & Installation[2] e.g. C: 11/5/89 I: 2/24/90	Fuel Type(s)
					Design	Max				
ES02	Boiler	Energy System B	Pile	Forced	285		-	20	2005	Wood
ES02	Boiler	Energy System B	-	-	285		-	-	2005	Natural Gas

[1] This section does not have to be completed for natural gas fired equipment. [2] If construction and installation dates are the same, enter only one date.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 3B – FUEL DATA*

Source Code	Fuel Type e.g. coal, natural gas, wood bark	Annual Consumption						Hourly Consumption e.g. lb/hr		Heat Content**		Percent Sulfur**		Percent Ash in Solid Fuel	
		Total Quantity		Percent Use by Season											
		Amount	Unit e.g. Tons, Gal, cf	Mar ↓ May	June ↓ Aug	Sept ↓ Nov	Dec ↓ Feb	Max	Avg.	Min	Avg.	Max.	Avg.	Max.	Avg.
ES02	Wood	170,000	tons	25	25	25	25	38,800		7,350 Btu/lb		2.5		7	
ES02	Natural Gas	2,448*	MMcf	25	25	25	25	279,412 cf*		1,020 Btu/cf		-		-	
* - Natural gas will normally be used primarily for startup only. Natural gas figures above assume worst-case, or 100% natural gas-firing using backup burners.															

Fuel Supplier Information**					
Fuel Type (Coal, Natural Gas, Fuel Oil)	Name of Supplier	Address	City	State	Zip

* Waste fuel, such as saw dust or trash, generated or used at this facility should be described on a separate sheet.
** This section does not need to be completed for natural gas fired units.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 9 – EMISSION DATA

Stack Source Code	Control Device Source Code	Emission Unit Source Code (Boiler or Other Process)	Pollutant Emitted[1]	Emission Rates				
				Average lb/hr	Maximum lb/hr	lb/million Btu Input[2]	Method of Determination[3] (e.g. Stack Test, AP-42, Material Balance)	Tons per Year Emitted
S201	C201, WP02	RD05-RD07, ES02	NOx	78.4	--	0.25	Vender	343
			CO	78.4	--	0.25	Vender	343
			PM	28.5	--	NA	Vender	125
			VOC	59.8	--	NA	Other OSB Facility	262
S202	C202	PRS2	NOx	20.4	--	NA	Norbord Data	89
			CO	24.5	--	NA	NCASI	107
			PM	4.0	--	NA	Existing Source Data, Method 5T	17
			VOC	11.4	--	NA	Norbord Data	50
S203	C203	FLP2, FB05, FB06	PM	1.0	--	NA	Grain loading	4.4
S204	C204	RS05, RS06	PM	1.0	--	NA	Grain loading	4.4
S205	C205	L2SD, L2SS	PM	1.0	--	NA	Grain loading	4.4
S206	C206	GB05, GB06	PM	1.0	--	NA	Grain loading	4.4
S207	C207	DFS2	PM	1.6	--	NA	Grain loading	7.0
S208	C208	HPW2, DB05, DB06	PM	0.5	--	NA	Grain loading	2.2

[1] Use a separate line for each pollutant emitted from a stack.
[2] Complete this column only for boilers and other fuel burning equipment.
[3] If emission rates determined by source test, submit the test report indicating the method used.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 10A – STACK DATA

Stack Source Code	Emission Unit Source Code (boiler or other process)	Stack Dimensions		Dimensions of largest Structure Near Stack[1]		Exit Gas Conditions at Maximum Emission Rate			
		Height Above Grade, ft.	Inside Diameter, ft.	Height, ft.	Longest Side, ft.	Velocity ft/sec	Temperature °F	Flow Rate (acfm)	
								Average	Maximum
S201	RD05, RD06, RD07, ES02	50	8.0	-	-	82.94	275	250,000	250,000
S202	PRS2	50	6.0	-	-	80.63	245	136,710	136,710
S203	FLP2, FB05, FB06	50	3.5	-	-	77.99	Ambient	45,000	45,000
S204	RS05, RS06	50	3.5	-	-	77.99	Ambient	45,000	45,000
S205	L2SD, L2SS	50	3.5	-	-	77.99	Ambient	45,000	45,000
S206	GB05, GB06	50	3.5	-	-	77.99	Ambient	45,000	45,000
S207	DFS2	50	2.3	-	-	193.5	Ambient	50,000	50,000
S208	HPW2, DB05, DB06	50	1.3	-	-	81.66	93	6,500	6,500

[1] These two columns are required only if the height of a stack is greater than 90 feet. A structure is considered near a stack if the distance between the stack and the structure is less than 5 times the height or width of the structure. The structure that the stack is coming from is also considered "near" the stack.

NOTE: If emissions are not vented through a stack, describe point of discharge below and, if necessary, on a separate sheet of paper.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 10B – STACK MONITORING DATA

Stack Source Code	Stack Parameter Monitored (e.g. opacity, CO, flow rate)	Monitor Installation Date	Monitor Manufacturer	Name of Monitor and/or Model Number
S201	Combustion Temperature	2005	TBD	TBD
S202	Combustion Temperature	2005	TBD	TBD
S203	Pressure Drop	2005	TBD	TBD
S204	Pressure Drop	2005	TBD	TBD
S205	Pressure Drop	2005	TBD	TBD
S206	Pressure Drop	2005	TBD	TBD
S207	Pressure Drop	2005	TBD	TBD
S208	Pressure Drop	2005	TBD	TBD

Comments:

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11A – AIR POLLUTION CONTROL DEVICES (APCD)

APCD Source Code	Process Equipment Source Code	APCD Type (Baghouse, ESP, Scrubber etc)	Date Installed	Make & Model Number (Attach Mfg. Specifications & Literature)	Unit Modified from Mfg Specifications?	Percent Control Efficiency		Inlet Gas Flow Rate (acfm)
						Design	Actual	
C201	RD05-RD07, ES02	TO/WESP	2005	TBD	No	90-95/85-90/50-75	PM/VOC/CO	TBD
C202	PRS2	TO	2005	TBD	No	75-85/90-95/50-75	PM/VOC/CO	TBD
C203	FLP2, FB05, FB06	Baghouse	2005	TBD	No	99		TBD
C204	RS05, RS06	Baghouse	2005	TBD	No	99		TBD
C205	L2SD, L2SS	Baghouse	2005	TBD	No	99		TBD
C206	GB05, GB06	Baghouse	2005	TBD	No	99		TBD
C207	DFS2	Baghouse	2005	TBD	No	99		TBD
C208	HPW2, DB05, DB06	Baghouse	2005	TBD	No	99		TBD

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11B – AIR POLLUTION CONTROL DEVICES – EMISSION INFORMATION

APCD Source Code	Pollutants Controlled	Inlet Loading To Collector		Inlet gas Temp. °F	Exit Loading From Collector		Exit gas Temp. °F	Pressure Drop Across Unit (Inches of water)
		lb/hr	Method of Determination		lb/hr	Method of Determination		
C201	PM, VOC, CO	700;598;314	Vender	-	35;59.8; 78.4	Vender	275	--
C202	PM, VOC, CO	27;228;98	Vender	-	4.0;11.4; 24.5	Vender	245	--
C203	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-2.5
C204	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-2.5
C205	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-2.5
C206	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-2.5
C207	PM	0.5 gr/dscf	Vender	Ambient	0.005 gr/dscf	Vender	Ambient	0.1-2.5
C208	PM	0.5 gr/dscf	Vender	93	0.005 gr/dscf	Vender	93	0.1-2.5

Note: Methods of determining inlet and exit loading include stack testing, material balance, emission factors or calculations based on manufacturer's specifications.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11D – BAGHOUSES & OTHER FILTER COLLECTORS

APCD Source Code	Filter Surface Area (sq. ft.)	No. of Bags	Inlet gas Dew Point, °F	Filter Material (e.g. Fiberglass, Nomex)	Gas Cooling Method (Heat Exchanger, Water Spray)	Cleaning Method (e.g. Revere Jet, Pulse Jet, Shaker)
C203	~5,000	~425	NA	Polyester	NA	Pulse
C204	~5,000	~425	NA	Polyester	NA	Pulse
C205	~5,000	~425	NA	Polyester	NA	Pulse
C206	~5,000	~425	NA	Polyester	NA	Pulse
C207	~7,000	~580	NA	Polyester	NA	Pulse
C208	~1,400	~112	NA	Polyester	NA	Pulse

Attach a physical description, dimensions and drawings for each baghouse and any additional information available such as particle size, maintenance schedules, monitoring procedures and breakdown or by-pass procedures. Explain how collected material is disposed of or utilized.

Facility Name: Norbord Georgia OSB **Date of Application:** November 2004

SECTION 11E –ELECTROSTATIC PRECIPITATORS

APCD Source Code	Cell No.	Type of ESP Wet or Dry	Voltage (Volts)		Current (Amps)		Spark Rate sparks/ min	Inlet Gas Velocity e.g. ft/min, ft/sec	Water Flow Rate[1] e.g. Gal/min, Gal/hr
			Primary	Secondary	Primary	Secondary			
WP02	3 Fields	TBD	10-600	25 kV (minimum)	5-60	6-300 mA	TBD	220,000-250,000 acfm	140 gpm (minimum)
Norbord may install either a wet or a dry ESP									

[1] Complete only for wet ESP's.
Attach a physical description, dimensions and drawings for each ESP and any additional information available such as: particle size, maintenance schedules, monitoring procedures and breakdown or by-pass procedures.

OTHER CONTROL DEVICES

For all other control equipment, such as hydrocarbon vapor control systems and multiclones, add extra sheets explaining details of construction and operation. Explain by-pass and break down procedures, maintenance procedures and monitoring procedures. Describe procedures for disposal of collected material.

PRODUCTS OF PRODUCTION

Source Code	Description of Product	SIC* Code of Product	Production Schedule		Hourly Production Rate (Give units: e.g. lb/hr, ton/hr)			
			Ton/yr	Hr/yr	Design	Normal	Maximum	Units
Facility	OSB	2493	650 mmsf	8,760	74.2	72.5	74.2	msf/hr

* SIC: Standard Industrial Classification

A - Facility Information

Parent/Holding Company Name: Norbord Georgia, Inc.

Facility Location:

964 Highway 280 West

Cordele, GA 31015-

County: Crisp

Location of Center of Production Area:

Latitude: deg N min sec

Longitude: deg W min sec

UTM Zone: 17

UTM Horizontal Meters: 235272

UTM Vertical Meters: 3539804

Legal Owner (legal actions, etc.)

Primary Contact: Jim Black, Regional Environmental Coordinator

Phone: (864) 697-5438 EXT: Fax: (864) 697-4529

E-Mail:

Mailing Address: Norbord Georgia, Inc.

964 Highway 280 West

Cordele, GA 31015

Facility Contact

Primary Contact: Keith Blanton, Environmental and Safety Manager

Phone: (229) 276-2802 EXT: Fax: (229) 273-3972

E-Mail:

Mailing Address: Norbord Georgia, Inc.

964 Highway 280 West

Cordele, GA 31015

Permits (granted permits, permit amendments, etc.)

Primary Contact: Avery Smith,

Phone: (229) 276-2802 EXT: Fax: (229) 273-3972

E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Permit Applications (requests for additional information, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Surveys, Questionaires (emission inventories, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Enforcement Actions (non-compliance letters, notices of violation, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Fees (fee manuals, fee forms, audit notices, etc.)

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972

E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Monitoring (CEM certification applications, requests for monitoring and testing information, etc.

Primary Contact: Avery Smith,
Phone: (229) 276-2802 EXT: Fax: (229) 273-3972
E-Mail:

Mailing Address: Norbord Georgia, Inc.
964 Highway 280 West
Cordele, GA 31015

Reason for Application Submittal:

Modification of Existing Title V Permit

A Summary of all the modifications to this application:

Annual OSB production capacity will increase by 650 MMsf upon project completion. This project seeks agency approval to install up to three rotary dryers, a wood fired energy system, blending and forming machines, a press, and additional finishing capacity. Process flow diagrams and facility layouts reflecting future operations are provided in Appendix B. See application report text for additional details.

Application Submitted for:

All facilities under common control at a Part 70 site.

A6 - Current Permits And Amendments (And Deferred Modifications Under State Rule 391-3-1-.03(6)(i))

Permit or Amendment Number:	**2493-081-0054-V-02-0**
Original Issue Date and Amendment Date:	June 25, 2002
Permit or Amendment Description:	Norbord Georgia OSB Initial Title V Operating Permit

All significant Processes at this Facility:

Process Oriented Strand Board

A - Facility Information

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Description

Southern yellow pine and/or hard wood logs are fed through debarkers and flakers. The wood flakes are conveyed to storage bins, dryers, rotary screens, and dry storage bins. The flakes are mixed with wax and resin in rotary blenders, and then conveyed to a forming line where the layer mat is cut and loaded into the press to form the OSB. The OSB is then trimmed and sanded. The boards are then stacked, edge coated, and strapped for shipment.

Facility SIC Code 2493

Code Description RECONSTITUTED WOOD PRODUCTS

Other ID Numbers:

FEI Number:	300058644
Dun and Bradstreet Number:	24-784-7148

These corresponding attachments are submitted in electronic form (.doc, .pdf, .jpg, or similar format).

Corresponding Attachments	Number Submitted
Building layout (overhead view), indicating location of emission units and stacks. (Only stacks that are listed in this application need to be located on the	1
Plant site map detailing property lines, latitude/longitude or UTM location provided in this application, any outdoor storage piles (indicating material), roads (include paved and unpaved), and areas of company property to which the public has unrestricted access.	1
General area map showing specific location of plant in relation to surrounding areas.	1
Process flow diagram(s) for the plant, including emission flow. (These do not have to include material input/output flow rates.)	1
Compliance Assurance Monitoring plans as required by 40 CFR Part 64. This document MUST be submitted in electronic form.	1

Comments:

B - Facility Emissions

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

B1 - Part 70 Site Potential To Emit

Criteria Pollutant	Potential To Emit Applicability Range for the Entire Site (tons per year)
Carbon Monoxide	250 or More
Hydrogen Sulfide	< 100
Nitrogen Oxides	250 or More
Particulate Matter	250 or More
Particulate Matter <10 microns	250 or More
Sulfur Dioxide	< 100
Total Hazardous Air Pollutants	25 or More
Total Reduced Sulfur (includes H2S)	< 100
Volatile Organic Compounds	250 or More

Hazardous Air Pollutant	Potential To Emit Applicability Range for the Entire Site (tons per year)
Acetaldehyde	10 To < 25
Acrolein	10 To < 25
Arsenic Compounds (inorganic including arsine)	> 0 to < 10
Benzene (including benzene from gasoline)	10 To < 25
Beryllium Compounds	> 0 to < 10
Cadmium Compounds	> 0 to < 10
Chromium Compounds	> 0 to < 10
Formaldehyde	25 or More
Hydrochloric acid	10 To < 25
Lead Compounds	> 0 to < 10
Manganese Compounds	> 0 to < 10
Mercury Compounds	> 0 to < 10
Methanol	25 or More
Nickel Compounds	> 0 to < 10

Phenol	25 or More

B2 - Facility-Wide Actual Emissions Estimates

Pollutant	Maximum Actual Annual (tons per year)	5 Year Average Actual (tons per year)
Nitrogen Oxides	634	634
Particulate Matter	547	547
Particulate Matter <10 micron	547	547
Sulfur Dioxide	24	24
Total Hazardous Air Pollutants	298	298
Volatile Organic Compounds	1991	1991

C - RULE APPLICABILITY

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

C1 - Regulatory Applicability

The following regulations have been identified as APPLICABLE:

FEDNEW	Enter into the comment field any newly promulgated Federal regulations that is applicable or potentially applicable to your facility that has not already been listed here.
	40 CFR 63, Subpart DDDD, NESHAPs for Plywood and Composite Wood Products
FEDERAL	40 CFR 63, Subpart A, (excluding 63.13, and 63.15(a)(2)) General Provisions[391-3-1-.02(9)(b)15]
FEDERAL	40 CFR 64, Compliance Assurance Monitoring
FEDERAL	40 CFR, Part 60, subpart A, General Provisions [391-3-1-.02(8)(b)1]
NONSIP	391-3-1-.02(2)(uu) Visibility Protection
SIP	391-3-1-.02(2)(b) Visible Emissions
SIP	391-3-1-.02(2)(d) Fuel-burning Equipment
SIP	391-3-1-.02(2)(e) Particulate Emission from Manufacturing Processes
SIP	391-3-1-.02(2)(ff) Solvent Metal Cleaning
SIP	391-3-1-.02(2)(g) Sulfur Dioxide
SIP	391-3-1-.02(2)(n) Fugitive Dust
SIP	391-3-1-.02(3) Sampling
SIP	391-3-1-.02(5) Open Burning
SIP	391-3-1-.02(6) Source Monitoring

C1 - Regulatory Applicability

The following regulations have been identified as NOT APPLICABLE:

Other	Other regulation - List additional regulations in the Comment blank.
	40 CFR 63, Subpart DDDDD, NESHAP for Institutional Boilers and Process Heaters
SIPNEW	Enter into the comment field any newly promulgated SIP regulations that is applicable or potentially applicable to your facility that has not already been listed here.
FEDERAL	40 CFR 60, subpart 0, NSPS for Sewage Treatment Plants [391-3-1-.02(8)(b)20]
FEDERAL	40 CFR 60, subpart AA, NSPS for Steel Plants: Electric Arc Furnaces[391-3-1-.02(8)(b)32]
FEDERAL	40 CFR 60, subpart AAA, NSPS for Steel Plants. Electric Arc Furnaces and Argon-

	Oxygen Decarburization Vessels Constructed After August 17, 1983[391-3-1-.02(8)(b)33]
FEDERAL	40 CFR 60, subpart BB, NSPS for Kraft Pulp Mills [391-3-1-.02(8)(b)34]
FEDERAL	40 CFR 60, subpart BBB, NSPS for Rubber Tire Manufacturing Industry[391-3-1-.02(8)(b)53]
FEDERAL	40 CFR 60, subpart CC, NSPS for Glass Manufacturing Plants[391-3-1-.02(8)(b)35]
FEDERAL	40 CFR 60, subpart D, NSPS for Fossil-fuel Fired Steam Generators391-3-1-.02(8)(b)2]
FEDERAL	40 CFR 60, subpart Da, NSPS for Electric Utility Steam Generating Units [391-3-1-.02(8)(b)3]
FEDERAL	40 CFR 60, subpart DD, NSPS for Grain Elevators [391-3-1-.02(8)(b)36]
FEDERAL	40 CFR 60, subpart DDD, NSPS for Volatile Organic Compound (VOC) Emission from Polymer Manufacturing Industry [391-3-1-.02(8)(b)54]
FEDERAL	40 CFR 60, subpart E, NSPS for Incinerators [391-3-1-.02(8)(b)6]
FEDERAL	40 CFR 60, subpart Ea, NSPS for Municipal Waste Combustors [391-3-1-.02(8)(b)7]
FEDERAL	40 CFR 60, subpart Eb, NSPS for Municipal Waste Combustors[391-3-1-.02(8)(b)71]
FEDERAL	40 CFR 60, subpart EE, NSPS for Surface Coating of Metal Furniture[391-3-1-.02(8)(b)37]
FEDERAL	40 CFR 60, subpart F, NSPS for Portland Cement Plants [391-3-1-.02(8)(b)8]
FEDERAL	40 CFR 60, subpart FFF, NSPS for Flexible Vinyl and Urethane Printing and Coating[391-3-1-.02(8)(b)55]
FEDERAL	40 CFR 60, subpart G, NSPS for Nitric Acid Plants [391-3-1-.02(8)(b)9]
FEDERAL	40 CFR 60, subpart GG, NSPS for Stationary Gas Turbines [391-3-1-.02(8)(b)38]
FEDERAL	40 CFR 60, subpart GGG, NSPS for Equipment Leaks of VOC in Petroleum Refineries [391-3-1-.02(8)(b)56]
FEDERAL	40 CFR 60, subpart H, NSPS for Sulfuric Acid Plants [391-3-1-.02(8)(b)10]
FEDERAL	40 CFR 60, subpart HH, NSPS for Lime Manufacturing Plants [391-3-1-.02(8)(b)39]
FEDERAL	40 CFR 60, subpart HHH, NSPS for Synthetic Fiber Production Facilities[391-3-1-.02(8)(b)57]
FEDERAL	40 CFR 60, subpart I, NSPS for Asphalt Concrete Plants [391-3-1-.02(8)(b)11]
FEDERAL	40 CFR 60, subpart III, NSPS for Volatile Organic Compounds (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes [391-3-1-.02(8)(b)58]
FEDERAL	40 CFR 60, subpart J, NSPS for Petroleum Refineries [391-3-1-.02(8)(b)12]
FEDERAL	40 CFR 60, subpart JJJ, NSPS for Petroleum Dry Cleaners [391-3-1-.02(8)(b)59]

FEDERAL	40 CFR 60, subpart K, NSPS for Storage Vessels for Petroleum Liquids[391-3-1-.02(8)(b)13]
FEDERAL	40 CFR 60, subpart Ka, NSPS for Storage Vessels for Petroleum Liquids[391-3-1-.02(8)(b)14]
FEDERAL	40 CFR 60, subpart Kb, NSPS for Volatile Organic Liquid Storage Vessels[391-3-1-.02(8)(b)15]
FEDERAL	40 CFR 60, subpart KK, NSPS for Lead-Acid Battery Manufacturing Plants[391-3-1-.02(8)(b)40]
FEDERAL	40 CFR 60, subpart KKK, NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants [391-3-1-.02(8)(b)60]
FEDERAL	40 CFR 60, subpart L, NSPS for Secondary Lead Smelters [391-3-1-.02(8)(b)16]
FEDERAL	40 CFR 60, subpart LL, NSPS for Metallic Mineral Processing Plants[391-3-1-.02(8)(b)41]
FEDERAL	40 CFR 60, subpart LLL, NSPS for Onshore Natural Gas Processing[391-3-1-.02(8)(b)61]
FEDERAL	40 CFR 60, subpart M, NSPS for Secondary Brass and Bronze Ingot Production Plants [391-3-1-.02(8)(b)17]
FEDERAL	40 CFR 60, subpart MM, NSPS for Automobile and Light-Duty Truck Coating Operations [391-3-1-.02(8)(b)42]
FEDERAL	40 CFR 60, subpart N, NSPS for Iron and Steel Plants [391-3-1-.02(8)(b)18]
FEDERAL	40 CFR 60, subpart Na, NSPS for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983[391-3-1-.02(8)(b)19]
FEDERAL	40 CFR 60, subpart NN, NSPS for Phosphate Rock Plants[391-3-1-.02(8)(b)43]
FEDERAL	40 CFR 60, subpart NNN, NSPS for Volatile Organic Compounds (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operation [391-3-1-.02(8)(b)62]
FEDERAL	40 CFR 60, subpart OOO, NSPS for Nonmetallic Mineral Processing Plants[391-3-1-.02(8)(b)63]
FEDERAL	40 CFR 60, subpart P, NSPS for Primary Copper Smelters [391-3-1-.02(8)(b)21]
FEDERAL	40 CFR 60, subpart PP, NSPS for Ammonium Sulfate Manufacture[391-3-1-.02(8)(b)44]
FEDERAL	40 CFR 60, subpart PPP, NSPS for Wool Fiberglass Insulation Manufacturing Plants [391-3-1-.02(8)(b)64]
FEDERAL	40 CFR 60, subpart Q, NSPS for Primary Zinc Smelters [391-3-1-.02(8)(b)22]
FEDERAL	40 CFR 60, subpart QQ, NSPS for Graphic Arts Industry: Publication Rotogravure Printing [391-3-1-.02(8)(b)45]
FEDERAL	40 CFR 60, subpart QQQ, NSPS for VOC Emissions from Petroleum Refinery

	Wastewater Systems [391-3-1-.02(8)(b)65]
FEDERAL	40 CFR 60, subpart R, NSPS for Primary Lead Smelters [391-3-1-.02(8)(b)23]
FEDERAL	40 CFR 60, subpart RR, NSPS for Pressure Sensitive Tape and Label Surface Coating Operations [391-3-1-.02(8)(b)46]
FEDERAL	40 CFR 60, subpart RRR, NSPS for VOC Emissions from Synthethic Organic Chemical Manufacturing Industry (SOCMI) Reactor Process [391-3-1-.02(b)66]
FEDERAL	40 CFR 60, subpart S, NSPS for Primary Aluminum Reduction [391-3-1-.02(8)(b)24]
FEDERAL	40 CFR 60, subpart SS, NSPS for Industrial Surface Coating: Large Appliances[391-3-1-.02(8)(b)47]
FEDERAL	40 CFR 60, subpart SSS, NSPS for Magnetic Tape Coating [391-3-1-.02(8)(b)67]
FEDERAL	40 CFR 60, subpart T, NSPS for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants [391-3-1-.02(8)(b)25]
FEDERAL	40 CFR 60, subpart TT, NSPS for Metal Coil Surface Coating [391-3-1-.02(8)(b)48]
FEDERAL	40 CFR 60, subpart TTT, NSPS for Plastic Parts for Business Machine Coatings [391-3-1-.02(8)(b)68]
FEDERAL	40 CFR 60, subpart U, NSPS for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants [391-3-1-.02(8)(b)26]
FEDERAL	40 CFR 60, subpart UU, NSPS for Asphalt Processing and Asphalt Roofing Manufacture [391-3-1-.02(8)(b)49]
FEDERAL	40 CFR 60, subpart UUU, NSPS for Calciners and Dryers in Mineral Industries [391-3-1-.02(8)(b)69]
FEDERAL	40 CFR 60, subpart V, NSPS for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants [391-3-1-.02(8)(b)27]
FEDERAL	40 CFR 60, subpart VV, NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [391-3-1-.02(8)(b)50]
FEDERAL	40 CFR 60, subpart VVV, NSPS for Polymeric Coating of Supporting Substrates Facilities [391-3-1-.02(8)(b)70]
FEDERAL	40 CFR 60, subpart W, NSPS for the Phosphate Fertilizer Industry: Triple Superphosphate Plants [391-3-1-.02(8)(b)28]
FEDERAL	40 CFR 60, subpart WW, NSPS for Beverage Can Surface Coating Industry[391-3-1-.02(8)(b)51]
FEDERAL	40 CFR 60, subpart WWW, NSPS for Municipal Solid Waste Landfills[391-3-1-.02(8)(b)72]
FEDERAL	40 CFR 60, subpart X, NSPS for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities [391-3-1-.02(8)(b)29]
FEDERAL	40 CFR 60, subpart XX, NSPS for Bulk Gasoline Terminals [391-3-1-.02(8)(b)52]

FEDERAL	40 CFR 60, subpart Y, NSPS for Coal Preparation Plants [391-3-1-.02(8)(b)30]
FEDERAL	40 CFR 60, subpart Z, NSPS for Ferroalloy Production Facilities[391-3-1-.02(8)(b)31]
FEDERAL	40 CFR 61, Subpart A – General Provisions
FEDERAL	40 CFR 61, subpart BB, NESHAP for Benzene Emissions from Benzene Transfer Operations [391-3-1-.02(9)(b)13]
FEDERAL	40 CFR 61, subpart C, NESHAP for Beryllium [391-3-1-.02(9)(b)1]
FEDERAL	40 CFR 61, subpart D, NESHAP for Beryllium Rocket Motor Firing[391-3-1-.02(9)(b)2]
FEDERAL	40 CFR 61, subpart E, NESHAP for Mercury [391-3-1-.02(9)(b)3]
FEDERAL	40 CFR 61, subpart F, NESHAP for Vinyl Chloride [391-3-1-.02(9)(b)4]
FEDERAL	40 CFR 61, subpart FF, NESHAP for Benzene Waste Operations[391-3-1-.02(9)(b)14]
FEDERAL	40 CFR 61, subpart J, NESHAP for Equipment Leaks (Fugitive Emission Sources) of Benzene [391-3-1-.02(9)(b)5]
FEDERAL	40 CFR 61, subpart L, NESHAP for Benzene Emissions from Coke Byproduct Recovery Plants [391-3-1-.02(9)(b)6]
FEDERAL	40 CFR 61, subpart M, NESHAP for Asbestos (inc. work practices)[391-3-1-.02(9)(b)7]
FEDERAL	40 CFR 61, subpart N, NESHAP for Inorganic Arsenic Emissions from Glass Manufacturing Plants [391-3-1-.02(9)(b)8]
FEDERAL	40 CFR 61, subpart O, NESHAP for Inorganic Arsenic Emissions from Primary Copper Smelters [391-3-1-.02(9)(b)9]
FEDERAL	40 CFR 61, subpart P, NESHAP for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities [391-3-1-.02(9)(b)10]
FEDERAL	40 CFR 61, subpart V, NESHAP for Equipment Leaks (Fugitive Emission Sources) [of VHAP] [391-3-1-.02(9)(b)11]
FEDERAL	40 CFR 61, subpart Y, NESHAP for Benzene Emissions from Benzene Storage Vessels [391-3-1-.02(9)(b)12]
FEDERAL	40 CFR 63, Subpart AA, NESHAPs for Phosphoric Acid Manufacturing Plants
FEDERAL	40 CFR 63, Subpart B, Sections 63.40 through 63.44, Requirements for Control Technology Determinations for Major Sources in Accordance with the Clean Air Act sections 112(g) [391-3-1-.02(9)(b)16]
FEDERAL	40 CFR 63, Subpart B, Sections 63.50 through 63.56, Requirements for Control Technology Determinations for Major Sources in Accordance with the Clean Air Act sections 112(j) [391-3-1-.02(9)(b)17]
FEDERAL	40 CFR 63, Subpart BB, NESHAPs for Phosphate Fertilizer Production Plants
FEDERAL	40 CFR 63, Subpart CC, NESHAPS for Emission Standards for Hazardous Air Pollutants from Petroleum Refineries,?63.642(k)procedures for ?63.642(g)[391-3-1-.02(9)(b)43]

FEDERAL	40 CFR 63, Subpart CCC, NESHAPs for Steel Pickling – HCl Process Facilities and HCl Regeneration Plants [391-3-1-.02(9)(b)65]
FEDERAL	40 CFR 63, Subpart CCCC, NESHAPs for Nutritional Yeast Manufacturing [391-3-1-.02(9)(b)91]
FEDERAL	40 CFR 63, Subpart D, Compliance Extensions for Early Reductions[391-3-1-.02(9)(b)19]
FEDERAL	40 CFR 63, Subpart DDD, NESHAPs for Mineral Wool Production [391-3-1-.02(9)(b)66]
FEDERAL	40 CFR 63, Subpart EE, NESHAPs for Magnetic Tape Manufacturing Operations[391-3-1-.02(9)(b)45]
FEDERAL	40 CFR 63, Subpart EEE, NESHAPs for Hazardous Waste Combustors [391-3-1-.02(9)(b)67]
FEDERAL	40 CFR 63, Subpart F, NESHAPs for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry [391-3-1-.02(9)(b)20]
FEDERAL	40 CFR 63, Subpart G, NESHAPs for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater. [391-3-1-.02(9)(b)21]
FEDERAL	40 CFR 63, Subpart GG, NESHAPS for Emission Standards for Aerospace Manufacturing and Rework Facilities[391-3-1-.02(9)(b)47]
FEDERAL	40 CFR 63, Subpart GGG, NESHAPs for Pharmaceuticals Production [391-3-1-.02(9)(b)69]
FEDERAL	40 CFR 63, Subpart GGGG, NESHAPs for Vegetable Oil Production [391-3-1-.02(9)(b)95]
FEDERAL	40 CFR 63, Subpart H, NESHAPs for Organic Hazardous Air Pollutants for Equipment Leaks [391-3-1-.02(9)(b)22]
FEDERAL	40 CFR 63, Subpart HH, NESHAPs for Oil and Natural Gas Production Facilities
FEDERAL	40 CFR 63, Subpart HHH, NESHAPs for Natural Gas Transmission and Storage Facilities [391-3-1-.02(9)(b)70]
FEDERAL	40 CFR 63, Subpart HHHH, NESHAPs for Wet Formed Fiberglass Mat Production
FEDERAL	40 CFR 63, Subpart I, NESHAPs for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks[391-3-1-.02(9)(b)23]
FEDERAL	40 CFR 63, Subpart II, NESHAPS for Emission Standards for Shipbuilding and Repair(Surface Coating[391-3-1-.02(9)(b)49]
FEDERAL	40 CFR 63, Subpart III, NESHAPs for Flexible Polyurethane Foam Production [391-3-1-.02(9)(b)71]
FEDERAL	40 CFR 63, Subpart J, NESHAPs for Polyvinyl Chloride and Copolymers Production
FEDERAL	40 CFR 63, Subpart JJ, NESHAPS for Emission Standards for Wood Furniture Manufacturing Operations[391-3-1-.02(9)(b)50]

FEDERAL	40 CFR 63, Subpart JJJ, NESHAPs for Group IV Polymers and Resins [391-3-1-.02(9)(b)72]
FEDERAL	40 CFR 63, Subpart KK, NESHAPs for Printing and Publishing Operations [391-3-1-.02(9)(b)51]
FEDERAL	40 CFR 63, Subpart L, NESHAPs for Coke Oven Batteries [391-3-1-.02(9)(b)26]
FEDERAL	40 CFR 63, Subpart LL, NESHAPs for Primary Aluminum Reduction Plants [391-3-1-.02(9)(b)52]
FEDERAL	40 CFR 63, Subpart LLL, NESHAPs for Portland Cement Manufacturing Industry [391-3-1-.02(9)(b)74]
FEDERAL	40 CFR 63, Subpart M, Perchloroethylene Air NESHAPs for Dry Cleaning Facilities[391-3-1-.02(9)(b)27]
FEDERAL	40 CFR 63, Subpart MM, NESHAPs for Combustion Sources at Kraft, Soda, and Sulfite Pulp and Paper Mills [391-3-1-.02(9)(b)53]
FEDERAL	40 CFR 63, Subpart MMM, NESHAPs for Pesticide Active Ingredient Production [391-3-1-.02(9)(b)75]
FEDERAL	40 CFR 63, Subpart N, NESHAPs for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks [391-3-1-.02(9)(b)28]
FEDERAL	40 CFR 63, Subpart NNN, NESHAPs for Wool Fiberglass Manufacturing [391-3-1-.02(9)(b)76]
FEDERAL	40 CFR 63, Subpart NNNN, NESHAPs for Large Appliance Surface Coating
FEDERAL	40 CFR 63, Subpart O, Ethylene Oxide NESHAPs for Sterilization Facilities[391-3-1-.02(9)(b)29]
FEDERAL	40 CFR 63, Subpart OO, NESHAPs for Tanks, Level 1 [391-3-1-.02(9)(b)55]
FEDERAL	40 CFR 63, Subpart OOO, NESHAPs for Amino/Phenolic Resins Production [391-3-1-.02(9)(b)77]
FEDERAL	40 CFR 63, Subpart PP, NESHAPs for Containers [391-3-1-.02(9)(b)56]
FEDERAL	40 CFR 63, Subpart PPP, NESHAPs for Polyether Polyols Production [391-3-1-.02(9)(b)78]
FEDERAL	40 CFR 63, Subpart Q, NESHAPs for Hazardous Air Pollutants for Industrial Process Cooling Towers [391-3-1-.02(9)(b)31]
FEDERAL	40 CFR 63, Subpart QQ, NESHAPs for Surface Impoundments [391-3-1-.02(9)(b)57]
FEDERAL	40 CFR 63, Subpart QQQ, NESHAPs for Primary Copper Production
FEDERAL	40 CFR 63, Subpart QQQQQ, NESHAPs for Friction Products Manufacturing
FEDERAL	40 CFR 63, Subpart R, NESHAPs for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations) [391-3-1-.02(9)(b)32]
FEDERAL	40 CFR 63, Subpart RR, NESHAPs for Individual Drain Systems [391-3-1-.02(9)(b)58]

FEDERAL	40 CFR 63, Subpart RRR, NESHAPs for Secondary Aluminum Production [391-3-1-.02(9)(b)80]
FEDERAL	40 CFR 63, Subpart S, NESHAPs for Pulp and Paper Industry
FEDERAL	40 CFR 63, Subpart SS, NESHAPs for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process [391-3-1-.02(9)(b)59]
FEDERAL	40 CFR 63, Subpart SSSS, NESHAPs for Metal Coil Surface Coating
FEDERAL	40 CFR 63, Subpart T, NESHAPs for Halogenated Solvent Cleaning[391-3-1-.02(9)(b)34]
FEDERAL	40 CFR 63, Subpart TT, NESHAPs for Equipment Leaks, Control Level 1 [391-3-1-.02(9)(b)60]
FEDERAL	40 CFR 63, Subpart TTT, NESHAPs for Primary Lead Smelting [391-3-1-.02(9)(b)82]
FEDERAL	40 CFR 63, Subpart TTTT, NESHAPs for Leather Finishings Operations
FEDERAL	40 CFR 63, Subpart U, NESHAPs for Group I Polymers and Resins
FEDERAL	40 CFR 63, Subpart UU, NESHAPs for Equipment Leaks, Control Level 2 [391-3-1-.02(9)(b)61]
FEDERAL	40 CFR 63, Subpart UUU, NESHAPs for Petroleum Refineries
FEDERAL	40 CFR 63, Subpart UUUU, NESHAPs for Cellulose Production Manufacturing
FEDERAL	40 CFR 63, Subpart VV, NESHAPs for Oil-Water Separators and Organic-Water Separators [391-3-1-.02(9)(b)62]
FEDERAL	40 CFR 63, Subpart VVV, NESHAPs for Publicly Owned Treatment Works [391-3-1-.02(9)(b)84]
FEDERAL	40 CFR 63, Subpart VVVV, NESHAPs for Boat Manufacturing [391-3-1-.02(9)(b)110]
FEDERAL	40 CFR 63, Subpart W, NESHAPs for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production [391-3-1-.02(9)(b)37]
FEDERAL	40 CFR 63, Subpart WW, NESHAPs for Storage Vessels (Tanks) Control Level 2 [391-3-1-.02(9)(b)63]
FEDERAL	40 CFR 63, Subpart X, NESHAPs for Hazardous Air Pollutants From Secondary Lead Smelting [391-3-1-.02(9)(b)38]
FEDERAL	40 CFR 63, Subpart XXX, NESHAPs for Ferroalloys Production: Ferromanganese and Silicomanganese [391-3-1-.02(9)(b)86]
FEDERAL	40 CFR 63, Subpart XXXX, NESHAPs for Tire Manufacturing
FEDERAL	40 CFR 63, Subpart Y, NESHAPS for Emission Standards for Marine Tank Vessel Loading Operations[391-3-1-.02(9)(b)39]
FEDERAL	40 CFR 63, Subpart YY, NESHAPs for Generic MACT Standards [391-3-1-.02(9)(b)64]

FEDERAL	40 CFR 68, Chemical Accident Prevention Provisions [391-3-1-.02(10)]
FEDERAL	40 CFR 72 - PERMITS REGULATIONS [391-3-1-.13]
FEDERAL	40 CFR 73 - ALLOWANCE SYSTEM
FEDERAL	40 CFR 75 - CONTINUOUS EMISSION MONITORING
FEDERAL	40 CFR 76 - ACID RAIN NITROGEN OXIDES EMISSION REDUCTION PROGRAM
FEDERAL	40 CFR 77 - EXCESS EMISSIONS
FEDERAL	40 CFR 82 Subpart F – Refrigerant Recycling Rule
FEDERAL	40 CFR 82 Subpart G – Significant New Alternative Program
FEDERAL	40 CFR 82, Subpart A - Production and Consumption Controls
FEDERAL	40 CFR 82, Subpart B - Servicing of Motor Vehicle Air Conditioners
FEDERAL	40 CFR 82, Subpart C - Ban on Nonessential Products Containing Class I Substances and Ban on Nonessential Products Containing or Manufactured with Class II Substances
FEDERAL	40 CFR 82, Subpart D - Federal Procurement
FEDERAL	40 CFR 82, Subpart E - The Labeling of Products Using Ozone Depleting Substances
FEDERAL	40 CFR 82, Subpart G - Significant New Alternatives Policy Program
FEDERAL	40 CFR, Part 60, subpart AAAA, NSPS for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 [391-3-1-.02(8)(b)74]
FEDERAL	40 CFR, Part 60, subpart CCCC, NSPS for Commercial and Industrial Solid Waste Incineration Units for Which Construction is Commenced After November 30, 1999 [391-3-1-.02(8)(b)75]
FEDERAL	40 CFR, Part 60, subpart Ec, NSPS for Hospital/Medical/Infectious Waste Incinerators for which construction is commenced after June 20, 1996 [391-3-1-.02(8)(b)73]
NONSIP	391-3-1-.02(2)(f) Normal Superphosphate Facilities
NONSIP	391-3-1-.02(2)(tt) VOC Emissions From Major Sources
NONSIP	391-3-1-.02(2)(yy) Nitrogen Oxide Emissions From Major Sources
PBR	391-3-1-.03(11)(b)1. Fuel-burning Equipment Burning Natural Gas/LPG and/or Distillate Oil
PBR	391-3-1-.03(11)(b)10. Fiberglas Molding and Forming Operations
PBR	391-3-1-.03(11)(b)11. Nut Shelling (Proposed)
PBR	391-3-1-.03(11)(b)2. Fuel-burning Equipment Burning Natural Gas/LPG and/or Residual Oil
PBR	391-3-1-.03(11)(b)3. On-Site Power Generation

PBR	391-3-1-.03(11)(b)4. Concrete and Concrete Products
PBR	391-3-1-.03(11)(b)5. Hot Mix Asphalt Plants
PBR	391-3-1-.03(11)(b)6. Cotton Ginning Operations
PBR	391-3-1-.03(11)(b)7. Coating and/or Gluing Operations (Proposed)
PBR	391-3-1-.03(11)(b)9. Non-reactive Mixing Operations
PBR	391-3-1-.03(110(b)8. Printing Operations
SIP	391-3-1-.02(2)(aa) VOC Emissions from Wire Coating
SIP	391-3-1-.02(2)(aaa) Consumer and Commercial Products
SIP	391-3-1-.02(2)(bb) Petroleum Liquid Storage
SIP	391-3-1-.02(2)(bbb) Gasoline Marketing
SIP	391-3-1-.02(2)(c) Incinerators
SIP	391-3-1-.02(2)(cc) Bulk Gasoline Terminals
SIP	391-3-1-.02(2)(ccc) VOC Emissions from Bulk Mixing Tanks
SIP	391-3-1-.02(2)(dd) Cutback Asphalt
SIP	391-3-1-.02(2)(ddd) VOC Emissions from Offset Lithography
SIP	391-3-1-.02(2)(ee) Petroleum Refinery
SIP	391-3-1-.02(2)(eee)VOC Emissions from Expanded Polystyrene Products Manufacturing
SIP	391-3-1-.02(2)(fff) Particulate Emissions from Yarn Spinning Operations
SIP	391-3-1-.02(2)(gg) Kraft Pulp Mills
SIP	391-3-1-.02(2)(ggg) Existing Municipal Solid Waste Landfills
SIP	391-3-1-.02(2)(h) Portland Cement Plants
SIP	391-3-1-.02(2)(hh) Petroleum Refinery Equipment Leaks
SIP	391-3-1-.02(2)(hhh) Wood Furniture Finishing and Cleaning Operations
SIP	391-3-1-.02(2)(i) Nitric Acid Plants
SIP	391-3-1-.02(2)(ii) VOC Emissions from Surface Coating of Miscellaneous Metal Parts and Products
SIP	391-3-1-.02(2)(iii) Hospital/Medical/Infectious Waste Incinerators Constructed on or Before June 20, 1996
SIP	391-3-1-.02(2)(j) Sulfuric Acid Plants

SIP	391-3-1-.02(2)(jj) VOC Emissions from Surface Coating of Flat Wood Paneling
SIP	391-3-1-.02(2)(jjj) NOx Emissions from Electric Utility Steam Generating Units
SIP	391-3-1-.02(2)(k) Asphaltic Concrete Hot Mix Plants
SIP	391-3-1-.02(2)(kk) VOC Emissions from Synthesized Pharmaceutical Manufacturing
SIP	391-3-1-.02(2)(kkk) VOC Emissions from Aerospace Manufacturing and Rework Facilities
SIP	391-3-1-.02(2)(l) Conical Burners
SIP	391-3-1-.02(2)(ll) VOC Emissions from the Manufacture of Pneumatic Rubber Tires
SIP	391-3-1-.02(2)(lll) NOx Emissions from Fuel-burning Equipment
SIP	391-3-1-.02(2)(mm) VOC Emissions from Graphic Arts Systems
SIP	391-3-1-.02(2)(mmm) NOx Emissions from Stationary Gas Turbines and Stationary Engines used to Generate Electricity
SIP	391-3-1-.02(2)(nn) VOC Emissions from External Floating Roof Tanks
SIP	391-3-1-.02(2)(nnn) NOx Emissions from Large Stationary Gas Turbines
SIP	391-3-1-.02(2)(o) Cupola Furnaces
SIP	391-3-1-.02(2)(oo) Fiberglass Insulation Manufacturing Plants
SIP	391-3-1-.02(2)(ooo) Heavy-Duty Diesel Engine Requirements
SIP	391-3-1-.02(2)(p) Kaolin and Fuller's Earth Processes
SIP	391-3-1-.02(2)(pp) Bulk Gasoline Plants
SIP	391-3-1-.02(2)(ppp) Commercial/Industrial/Solid Waste Incinerators Constructed On or Before November 30, 1999
SIP	391-3-1-.02(2)(q) Cotton Gins
SIP	391-3-1-.02(2)(qq) VOC Emissions from Large Petroleum Dry Cleaners
SIP	391-3-1-.02(2)(r) Granular and Mixed Fertilizer
SIP	391-3-1-.02(2)(rr) Gasoline Dispensing Facility - Stage I
SIP	391-3-1-.02(2)(ss) Gasoline Transport Vehicles and Vapor Collection Systems
SIP	391-3-1-.02(2)(t) VOC Emissions from Automobile and Light-Duty Truck Manufacturing
SIP	391-3-1-.02(2)(u) VOC Emissions from Can Coating
SIP	391-3-1-.02(2)(v) VOC Emissions from Coil Coating
SIP	391-3-1-.02(2)(vv) Volatile Organic Liquid Handling and Storage

SIP	391-3-1-.02(2)(w) VOC Emissions from Paper Coating
SIP	391-3-1-.02(2)(x) VOC Emissions from Fabric and Vinyl Coating
SIP	391-3-1-.02(2)(y) VOC Emissions from Metal Furniture Coating
SIP	391-3-1-.02(2)(z) VOC Emissions from Large Appliance Surface Coating
SIP	391-3-1-.02(2)(zz) Gasoline Dispensing Facilities--Stage II

C1 - Regulatory Applicability

The following regulations have been identified as POTENTIALLY APPLICABLE:

FEDERAL	40 CFR 60, subpart Db, NSPS for Industrial-Commercial-Institutional Steam Generating Units [391-3-1-.02(8)(b)4] ***At this time, it is Georgia EPD's opinion that Subpart Db might apply based on a review of applicability determinations and the fact the energy system, which supplies heat to the TOH and dryers, has a heat input capacity of 285 MMBtu/hr. Since the timing of this application submittal is critical, the applicability of Subpart Db and Dc will be handled separately from this permit application.***
FEDERAL	40 CFR 60, subpart Dc, NSPS for Small Industrial -Commercial-Institutional Steam Generating Units [391-3-1-.02(8)(b)5] ***At this time, it is Georgia EPD's opinion that Subpart Db might apply based on a review of applicability determinations and the fact the energy system, which supplies heat to the TOH and dryers, has a heat input capacity of 285 MMBtu/hr. Since the timing of this application submittal is critical, the applicability of Subpart Db and Dc will be handled separately from this permit application.***
FEDERAL	40 CFR 82, Subpart F - Recycling and Emissions Reduction ***Potentially applies if the facility maintains, repairs, services, or disposes of appliances that utilize Class I or Class II ozone depleting substances. Subpart F generally requires persons completing the repairs, service, or disposal to be properly certified. An appropriately certified technician completes all repairs, service, and disposal of ozone depleting substances from the air conditioners at the facility.***

C2 - Title VI Applicability

Does your facility have any air conditioners or refrigeration equipment that uses CFC's, HFC's or other stratospheric ozone-depleting substances listed in 40 CFR Part 82, Subpart A, Appendices A and B?

Yes

Does any air conditioner or any piece of refrigeration equipment contain a refrigerant charge of greater than 50 lbs?

Yes

Does your facility maintain, service, repair, or dispose of any motor vehicle air conditioners (MVAC's) or appliances?

No

Comments:

D1 - Insignificant Activities

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

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Category: Combustion Equipment

Insignificant Activity: Open burning in compliance with Georgia Rule 391-3-1-.02 (5).

Quantity: 1

Comment: Not quantifiable

Category: Combustion Equipment

Insignificant Activity: Stationary engines burning: natural gas, gasoline, diesel fuel, or dual fuels which are used exclusively for emergency power generation.

Quantity: 1

Comment:

Category: Combustion Equipment

Insignificant Activity: Stationary engines burning: natural gas, LPG, and/or diesel fueled generators used for emergency, peaking, and/or standby power generation, where the combined peaking and standby power generation do not exceed 200 hours per year.

Quantity: 1

Comment: Unit(s) may be constructed as part of current project; actual number of units (if any) to be determined.

Category: Combustion Equipment

Insignificant Activity: Stationary engines burning: natural gas, LPG, and/or diesel fuel used for other purposes, provided that the output of each engine does not exceed 400 horsepower and that no individual engine operates for more than 2,000 hours per year.

Quantity: 1

Comment: Unit(s) may be constructed as part of current project; actual number of units (if any) to be determined.

Category: Combustion Equipment

Insignificant Activity: Stationary engines burning: gasoline used for other purposes, provided that the output of each engine does not exceed 100 horsepower and that no individual engine operates for more than 500 hours per year.

Quantity: 1

Comment: Unit(s) may be constructed as part of current project; actual number of units (if any) to be determined.

D1 - Insignificant Activities

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Category:	Industrial Operations
Insignificant Activity:	Equipment used exclusively for mixing and blending water-based adhesives and coating at ambient temperatures.
Quantity:	2
Comment:	

Category:	Industrial Operations
Insignificant Activity:	Carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, shot blasting, shot peening, or polishing; ceramics, glass, leather, metals, plastics, rubber, concrete, paper stock or wood, also including roll grinding and ground wood pulping stone sharpening, provided that: Activity is performed indoors; and No significant fugitive particulate emissions enter the outdoor atmosphere; and No visible emissions enter the outdoor atmosphere.
Quantity:	4
Comment:	

Category:	Laboratories and Testing
Insignificant Activity:	Laboratory fume hoods and vents associated with bench-scale laboratory equipment used for physical or chemical analysis.
Quantity:	1
Comment:	

Category:	Laboratories and Testing
Insignificant Activity:	Research and development facilities, quality control testing facilities and/or small pilot projects, where combined daily emissions from all operations are not individually major or are support facilities not making significant contributions to the product of a collocated major manufacturing facility.
Quantity:	3
Comment:	

Category:	Maintenance, Cleaning, and Housekeeping
Insignificant Activity:	Non-routine clean out of tanks and equipment for the purposes of worker entry or in preparation for maintenance or decommissioning.
Quantity:	1
Comment:	Not quantifiable

Category: Maintenance, Cleaning, and Housekeeping

Insignificant Activity: Cold cleaners having an air/vapor interface of not more than 10 square feet and that do not use a halogenated solvent.

Quantity: 6

Comment:

Category: Mobile Sources

Insignificant Activity: Cleaning and sweeping of streets and paved surfaces

Quantity: 1

Comment: Not quantifiable

Category: Storage Tanks and Equipment

Insignificant Activity: All chemical storage tanks used to store a chemical with a true vapor pressure of less than or equal to 10 millimeters of mercury (0.19 psia).

Quantity: 4

Comment:

Category: Storage Tanks and Equipment

Insignificant Activity: All petroleum liquid storage tanks with a capacity of less than 10,000 gallons storing a petroleum liquid.

Quantity: 2

Comment:

Category: Storage Tanks and Equipment

Insignificant Activity: Pressurized vessels designed to operate in excess of 30 psig storing a petroleum fuel.

Quantity: 8

Comment:

Category: Storage Tanks and Equipment

Insignificant Activity: Gasoline storage and handling equipment at loading facilities handling less than 20,000 gallons per day or at vehicle dispensing facilities.

Quantity: 1

Comment:

D1 - Insignificant Activities

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Category:	Storage Tanks and Equipment
Insignificant Activity:	Portable drums, barrels and totes provided that the volume of each container does not exceed 550 gallons.
Quantity:	300
Comment:	
Category:	Trade Operations
Insignificant Activity:	Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities whose emissions of hazardous air pollutants (HAPs) fall below 1,000 pounds per year.
Quantity:	1
Comment:	Not quantifiable

D2 - Generic Emissions Grouping

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

This table lists the Generic Emissions Grouping information for groups of emission units that are subject to one or more of the three Georgia Rules, 391-3-1-.02(2)(b), (e), and (n) and the potential emissions of particulate matter, based on TSP, are less than 25 tons per year per process line or unit in each group.
Any Emissions Unit subject to a NESHAP, NSPS, or any specific Air Quality Permit condition(s) is not included.

Unit ID:	**G001**
Number of Units:	1
Number of Units in Compliance:	1
Applicable Ga Rule(b):	Yes
Applicable Ga Rule(e):	No
Applicable Ga Rule(n):	Yes
Comments:	The actual number of piles varies. However, all piles are in compliance with Ga Rule (b) and Ga Rule (n).

D3 - Generic Fuel Burning Equipment

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

This table lists the groups of fuel burning emission units indicating the number of units in each group and the number of units in compliance with Georgia Rules 391-3-1-.02(2) (d) and possibly (b):

	Number of Units	Number of Units in Compliance
Any fuel burning equipment with a rated heat input capacity of 1 million BTU/hr or less.	0	0
Fuel burning equipment with a rated heat input capacity of less than 10 million BTU/hr burning only natural gas and/or LPG.	2	2
Fuel burning equipment with a rated heat input capacity of less than 5 million BTU/hr, burning only distillate fuel oil, natural gas and/or LPG.	0	0

D5 - Short Term Activities

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Activity Name:	**Tub Grinder for Wood Yard Material**
Activity Description:	
Activity Duration:	14 hr/day
Activity Frequency:	Daily
Applicable Standards:	Ga Rule (b) Ga Rule (n)
Is the Activity in Compliance with All Applicable Standards?	**Yes**

D6 - Insignificant Activities based on Emission Levels

Facility: Norbord Georgia OSB

Application: 2004 Title V Permit Modification

These Emission Units or Activities are not listed elsewhere in the application and whose potential emissions are:

1) less than 10,000 lb. per year of any regulated air pollutant; AND
2) less than 1,000 lb. per year of any regulated HAP and less than 2,500 lb. per year of any combination of regulated HAPs; AND
3) less than 5,000 lb. per year of volatile organic compounds and oxides of nitrogen in the non-attainment area; AND
4) not subject to any specific state or federal standards or permit conditions.

Activity	No. of Units
Globe EdgeSeal Paint Booth	2
Log Debarkers	6
Resin Storage Tanks	12
Roll Coater Ink Application	2
Stencil Ink Application	2
Tongue and Groove Edge Seal Paint Booth	2
Warehouse	1
Wastewater Treatment System (Spray Field, Storage Pond, and Wet Well)	1
Wood Co-Product System	1

D7 - Significant Emission Units
Boilers, Furnaces, Other Indirect Contact Heat Generating Equipment

Facility: Norbord Georgia OSB

Application: 2004 Title V Permit Modification

Emission Unit: WELL Wellons Wet Cell Burner

Emission Unit

Unit ID:	WELL
Unit Name:	Wellons Wet Cell Burner

Model Information

Manufacturer:	Wellons, Inc.
Model Number:	Contract No. F-0903
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Heat Input Capacity:	210 MMBtu

Description

Wood-fired (natural gas backup) combustion unit used to dry wood flakes and heat thermal oil

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	58824 cubic feet
Maximum Annual Consumption:	515 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	60 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Fuel: Wood

Maximum Hourly Consumption:	28571 lbs
Maximum Annual Consumption:	125141 tons
Maximum Fuel Heating Value:	7350 Btu/lb
Maximum Heat Input:	210 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Comments

Boilers, Furnaces, Other Indirect Contact Heat Generating Equipment

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: ES02 Energy System B

Emission Unit

Unit ID:	ES02
Unit Name:	Energy System B

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Heat Input Capacity:	285 MMBtu

Description

Wood-fired (natural gas backup) combustion unit used to dry wood flakes and heat thermal oil

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	279412 cubic feet
Maximum Annual Consumption:	2448 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	285 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Fuel: Wood

Maximum Hourly Consumption:	38800 lbs
Maximum Annual Consumption:	170000 tons
Maximum Fuel Heating Value:	7350 Btu/lb
Maximum Heat Input:	285 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Comments

Natural gas will normally be used primarily for startup only. Natural gas consumption figures assume worst-case, or 100% natural gas-firing using backup burners.

D7 - Significant Emission Units
Dryers, Calciners, Kilns and Ovens

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: RD01 Rotary Dryer #1

Emission Unit

Unit ID:	RD01
Unit Name:	Rotary Dryer #1

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

Dryers, Calciners, Kilns and Ovens

Emission Unit: RD02 Rotary Dryer #2

Emission Unit

Unit ID:	RD02
Unit Name:	Rotary Dryer #2

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

Dryers, Calciners, Kilns and Ovens

Emission Unit: RD03 Rotary Dryer #3

Emission Unit

Unit ID:	RD03
Unit Name:	Rotary Dryer #3

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

Dryers, Calciners, Kilns and Ovens

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: RD04 Rotary Dryer #4

Emission Unit

Unit ID:	RD04
Unit Name:	Rotary Dryer #4

Model Information

Manufacturer:	MEC Company
Model Number:	Model 1360T
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	49020 cubic feet
Maximum Annual Consumption:	429 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	40400 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from the Wellons unit (Emission Unit ID No. WELL). Natural gas is only used when the Wellons unit is not capable of providing necessary heat to the dryers.

Dryers, Calciners, Kilns and Ovens

Emission Unit: RD05 Rotary Dryer #5

Emission Unit

Unit ID:	RD05
Unit Name:	Rotary Dryer #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	98040 cubic feet
Maximum Annual Consumption:	858 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	100 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	104000 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from Energy System B (Emission Unit ID No. ES02). Natural gas is only used when the Energy System is not capable of providing necessary heat to the dryers.

Dryers, Calciners, Kilns and Ovens

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: RD06 Rotary Dryer #6

Emission Unit

Unit ID:	RD06
Unit Name:	Rotary Dryer #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	98040 cubic feet
Maximum Annual Consumption:	858 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	100 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	104000 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from Energy System B (Emission Unit ID No. ES02). Natural gas is only used when the Energy System is not capable of providing necessary heat to the dryers.

Emission Unit: RD07 Rotary Dryer #7

Emission Unit

Unit ID:	RD07
Unit Name:	Rotary Dryer #7

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Type of Emission Unit:	Dryer

Equipment Type

This unit is a type of: Rotary

Description

Direct-fired, rotary wood flake dryer located after the green bins

Fuels and Firing Conditions:

Fuel: Natural Gas

Maximum Hourly Consumption:	98040 cubic feet
Maximum Annual Consumption:	858 MM cubic feet
Maximum Fuel Heating Value:	1020 Btu/cf
Maximum Heat Input:	50 MMBtu/hr
Maximum Allowable Sulfur Percentage:	2.5 %

Material: Wood Flakes

Maximum Hourly Input Rate:	104000 pounds/hr
Average Free Moisture Content	50 %

Comments

Under normal operating conditions, wood flakes are dried using exhaust gas from Energy System B (Emission Unit ID No. ES02). Natural gas is only used when the Energy System is not capable of providing necessary heat to the dryers.

Current designs call for the installation of up to three rotary dryers (RD05, RD06, and RD07). RD07 may or may not be installed depending on the final design configuration.

D7 - Significant Emission Units
Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: DB01 Dry Bin #1

Emission Unit

Unit ID:	DB01
Unit Name:	Dry Bin #1

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: DB02 Dry Bin #2

Emission Unit

Unit ID:	DB02
Unit Name:	Dry Bin #2

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: DB03 Dry Bin #3

Emission Unit

Unit ID:	DB03
Unit Name:	Dry Bin #3

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: DB04 Dry Bin #4

Emission Unit

Unit ID:	DB04
Unit Name:	Dry Bin #4

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB　　　　Application: 2004 Title V Permit Modification

Emission Unit: DB05 Dry Bin #5

Emission Unit

Unit ID:	DB05
Unit Name:	Dry Bin #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	50000 pounds/hr
Maximum Annual Input:	214000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: DB06 Dry Bin #6

Emission Unit

Unit ID:	DB06
Unit Name:	Dry Bin #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	50000 pounds/hr
Maximum Annual Input:	214000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: DB07 Dry Bin #7

Emission Unit

Unit ID:	DB07
Unit Name:	Dry Bin #7

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for dry wood flakes prior to wood flake blenders.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	50000 pounds/hr
Maximum Annual Input:	214000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Current designs call for the installation of up to three dry bins (DB05, DB06, and DB07). DB07 may or may not be installed depending on the final design configuration.

Emission Unit: DFS2 Dry Fuel Storage Silo #2

Emission Unit

Unit ID:	DFS2
Unit Name:	Dry Fuel Storage Silo #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Silo for the storage of dry wood waste prior to being sent to Wellons wet cell burner (WELL) and Energy System (ES02).

Materials Input:

Material: Dry Wood

Maximum Hourly Rate:	25600 pounds/hr
Maximum Annual Input:	113000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: FLP2 Forming Line & Prepress #2

Emission Unit

Unit ID:	FLP2
Unit Name:	Forming Line & Prepress #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Process line that forms and aligns treated wood flake mat prior to the OSB press.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	700 pounds/hr
Maximum Annual Input:	3000 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

Emission Unit: FLPP Forming Line & Prepress #1

Emission Unit

Unit ID:	FLPP
Unit Name:	Forming Line & Prepress #1

Model Information

Manufacturer:	Siempelkamp
Model Number:	A314,ID No. 07216371
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Process line that forms and aligns treated wood flake mat prior to the OSB press.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	400 pounds/hr
Maximum Annual Input:	1752 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

Emission Unit: GB01 Green Bin #1

Emission Unit

Unit ID:	GB01
Unit Name:	Green Bin #1

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Emission Unit: GB02 Green Bin #2

Emission Unit

Unit ID:	GB02
Unit Name:	Green Bin #2

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: GB03 Green Bin #3

Emission Unit

Unit ID:	GB03
Unit Name:	Green Bin #3

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: GB04 Green Bin #4

Emission Unit

Unit ID:	GB04
Unit Name:	Green Bin #4

Model Information

Manufacturer:	PS&E Projects
Model Number:	ReferenceNo. P89-629
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	54300 pounds/hr
Maximum Annual Input:	237834 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: GB05 Green Bin #5

Emission Unit

Unit ID:	GB05
Unit Name:	Green Bin #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	89000 pounds/hr
Maximum Annual Input:	386100 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: GB06 Green Bin #6

Emission Unit

Unit ID:	GB06
Unit Name:	Green Bin #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	89000 pounds/hr
Maximum Annual Input:	386100 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Emission Unit: GB07 Green Bin #7

Emission Unit

Unit ID:	GB07
Unit Name:	Green Bin #7

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Storage bin for wet wood flakes prior to rotary wood flake dryers.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	89000 pounds/hr
Maximum Annual Input:	386100 tons per year
CAS Number:	
Moisture Content:	50 %

Comments

Current designs call for the installation of up to green bins (GB05, GB06, and GB07). GB07 may or may not be installed depending on the final design configuration.

Miscellaneous

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: GLSS Globe Line Saw System

Emission Unit

Unit ID:	GLSS
Unit Name:	Globe Line Saw System

Model Information

Manufacturer:	Globe Machine Mfc Company
Model Number:	Ref No. 9001-022
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

OSB board saws used in finishing of OSB boards.

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	5273 pounds/hr
Maximum Annual Input:	23096 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Emission Unit: HPW2 High Pressure Waste System #2

Emission Unit

Unit ID:	HPW2
Unit Name:	High Pressure Waste System #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

High pressure wood waste collection system for various systems throughout the mill. Also supplies dry fuel storage silo #2.

Materials Input:

Material: Wood Dust

Maximum Hourly Rate:	18500 pounds/hr
Maximum Annual Input:	81000 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: HPWS High Pressure Waste System #1

Emission Unit

Unit ID:	HPWS
Unit Name:	High Pressure Waste System #1

Model Information

Manufacturer:	Western Pneumatics South
Model Number:	Model WPS-42-FLT-PR
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

Description

High pressure wood waste collection system for various systems throughout the mill. Also supplies dry fuel storage silo.

Materials Input:

Material: Wood Dust

Maximum Hourly Rate:	11360 pounds/hr
Maximum Annual Input:	49757 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: L2SD Line #2 Sander System

Emission Unit

Unit ID:	L2SD
Unit Name:	Line #2 Sander System

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

OSB board sander used in finishing of OSB boards.

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	8600 pounds/hr
Maximum Annual Input:	37700 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Emission Unit: L2SS Line #2 Saw System

Emission Unit

Unit ID:	L2SS
Unit Name:	Line #2 Saw System

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

OSB board saws used in finishing of OSB boards.

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	8600 pounds/hr
Maximum Annual Input:	37700 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: PRES Press #1

Emission Unit

Unit ID:	PRES
Unit Name:	Press #1

Model Information

Manufacturer:	Siempelkamp
Model Number:	A314,ID No. 07216371
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Hydraulic heating press for the production of OSB.

Materials Input:

Material: Resinated Wood Flakes

Maximum Hourly Rate:	69500 pounds/hr
Maximum Annual Input:	304410 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

Emission Unit: PRS2 Press #2

Emission Unit

Unit ID:	PRS2
Unit Name:	Press #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Hydraulic heating press for the production of OSB.

Materials Input:

Material: Resinated Wood Flakes

Maximum Hourly Rate:	113000 pounds/hr
Maximum Annual Input:	495300 tons per year
CAS Number:	
Moisture Content:	4 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: RS01 Rotary Screen #1

Emission Unit

Unit ID:	RS01
Unit Name:	Rotary Screen #1

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit: RS02 Rotary Screen #2

Emission Unit

Unit ID:	RS02
Unit Name:	Rotary Screen #2

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: RS03 Rotary Screen #3

Emission Unit

Unit ID:	RS03
Unit Name:	Rotary Screen #3

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: RS04 Rotary Screen #4

Emission Unit

Unit ID:	RS04
Unit Name:	Rotary Screen #4

Model Information

Manufacturer:	PS&E Projects
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr
Maximum Annual Input:	131400 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: RS05 Rotary Screen #5

Emission Unit

Unit ID:	RS05
Unit Name:	Rotary Screen #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	50000 pounds/hr
Maximum Annual Input:	213500 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: RS06 Rotary Screen #6

Emission Unit

Unit ID:	RS06
Unit Name:	Rotary Screen #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	50000 pounds/hr
Maximum Annual Input:	213500 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Miscellaneous

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit: RS07 Rotary Screen #7

Emission Unit

Unit ID:	RS07
Unit Name:	Rotary Screen #7

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

Description

Rotary screen prior to dry wood flake bins.

Materials Input:

Material: Wood Flakes

Maximum Hourly Rate:	50000 pounds/hr
Maximum Annual Input:	213500 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Current designs call for the installation of up to rotary screens (RS05, RS06, and RS07). RS07 may or may not be installed depending on the final design configuration.

Miscellaneous

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit: TGSL Tongue and Groove Saw Line

Emission Unit

Unit ID:	TGSL
Unit Name:	Tongue and Groove Saw Line

Model Information

Manufacturer:	Convey-Keystone, PSS
Model Number:	#4040 Double Edger
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

Description

OSB board saws used in finishing of OSB boards; Progressive Saw Systems #4040 Double Edger and Progressive Systems Saw, Model SB/DD-80 Rip

Materials Input:

Material: Wood Dust/Chips

Maximum Hourly Rate:	1762 pounds/hr
Maximum Annual Input:	7718 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

Emission Unit: TGSS Tongue and Groove Sander System

Emission Unit

Unit ID:	TGSS
Unit Name:	Tongue and Groove Sander System

Model Information

Manufacturer:	IMEAS Bottom Sander
Model Number:	Model 2-2/265
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

Description

OSB board sander used in finishing of OSB boards.

Materials Input:

Material: Wood Dust

Maximum Hourly Rate:	4324 pounds/hr
Maximum Annual Input:	18939 tons per year
CAS Number:	
Moisture Content:	0 %

Comments

D7 - Significant Emission Units
Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB　　Application: 2004 Title V Permit Modification

Emission Unit: FB01 Flake Blender #1

Emission Unit

Unit ID:	FB01
Unit Name:	Flake Blender #1

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1922 pounds/hr.
Maximum Annual Input:	8418 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: FB01 Flake Blender #1

Comments

Non-Reactive Bulk Mixing

Emission Unit: FB02 Flake Blender #2

Emission Unit

Unit ID:	FB02
Unit Name:	Flake Blender #2

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1922 pounds/hr.
Maximum Annual Input:	8418 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: FB02 Flake Blender #2

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: FB03 Flake Blender #3

Emission Unit

Unit ID:	FB03
Unit Name:	Flake Blender #3

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1112 pounds/hr.
Maximum Annual Input:	4871 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB

Application: 2004 Title V Permit Modification

Emission Unit: FB03 Flake Blender #3

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: FB04 Flake Blender #4

Emission Unit

Unit ID:	FB04
Unit Name:	Flake Blender #4

Model Information

Manufacturer:	Coil Industries, Ltd.
Model Number:	N/A
Date Manufactured or Reconstructed:	1990
Installation Date:	1990
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1112 pounds/hr.
Maximum Annual Input:	4871 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	634 pounds/hr.
Maximum Annual Input:	2777 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	30000 pounds/hr.
Maximum Annual Input:	131400 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: FB04 Flake Blender #4

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB　　　　Application: 2004 Title V Permit Modification

Emission Unit: FB05 Flake Blender #5

Emission Unit

Unit ID:	FB05
Unit Name:	Flake Blender #5

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1800 pounds/hr.
Maximum Annual Input:	8000 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	1000 pounds/hr.
Maximum Annual Input:	4500 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr.
Maximum Annual Input:	226000 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: FB05 Flake Blender #5

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB　　Application: 2004 Title V Permit Modification

Emission Unit: FB06 Flake Blender #6

Emission Unit

Unit ID:	FB06
Unit Name:	Flake Blender #6

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1800 pounds/hr.
Maximum Annual Input:	8000 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	1000 pounds/hr.
Maximum Annual Input:	4500 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr.
Maximum Annual Input:	226000 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: FB06 Flake Blender #6

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: FB07 Flake Blender #7

Emission Unit

Unit ID:	FB07
Unit Name:	Flake Blender #7

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005
Operating Temperature in degree F:	
Covered during operation:	Yes

Description

Rotary blender located after the dry bins

Materials Processed:

Material: Resin

Maximum Hourly Rate:	1800 pounds/hr.
Maximum Annual Input:	8000 tons per year
CAS Number:	

Material: Wax

Maximum Hourly Rate:	1000 pounds/hr.
Maximum Annual Input:	4500 tons per year
CAS Number:	

Material: Wood Flakes

Maximum Hourly Rate:	52000 pounds/hr.
Maximum Annual Input:	226000 tons per year
CAS Number:	

Comments

Non-Reactive Bulk Mixing

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit: FB07 Flake Blender #7

Current designs call for the installation of up to flake blenders (FB05, FB06, and FB07). FB07 may or may not be installed depending on the final design configuration.

D10 - Control Devices
Electrostatic Precipitator

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: WP01 Wet Electrostatic Precipitator #1

Emission Unit

Unit ID:	WP01
Unit Name:	Wet Electrostatic Precipitator #1

Model Information

Manufacturer:	United McGill
Model Number:	Model 3-900
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

General Information

Control Reason: To comply with state or federal rule

Parameters Currently Monitored: Secondary Amperage/Voltage
Water Flow Rate

Primary Voltage:	300 volts
Primary Amperage:	30 amps
Secondary Voltage:	25 kiloVolts
Secondary Amperage:	150 milliamps
Spark Rate:	sparks per minute
Number Fields:	3 Fields
Inlet Gas Velocity:	235000
Water Flowrate:	140 gallons/min.
Type Of ESP:	WET

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	90 %

This Control Device controls Emissions from the following Equipment:

Electrostatic Precipitator

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: WP01 Wet Electrostatic Precipitator #1

Emission Unit	WELL, Wellons Wet Cell Burner
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Emission Unit	RD01, Rotary Dryer #1
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD02, Rotary Dryer #2
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD03, Rotary Dryer #3
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD04, Rotary Dryer #4
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	GB01, Green Bin #1
Equipment Type	Miscellaneous

Emission Unit	GB02, Green Bin #2
Equipment Type	Miscellaneous

Emission Unit	GB03, Green Bin #3
Equipment Type	Miscellaneous

Emission Unit	GB04, Green Bin #4
Equipment Type	Miscellaneous

Description

Wet Electrostatic Precipitator

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Primary amperage typically ranges from 5-60 amps, Primary voltage typically ranges from 10-600 volts. Secondary amperage ranges from 6-300 milliamps. Secondary voltage provided is the expected minimum.

Inlet gas velocity provided is actually an average value for inlet gas flowrate in ACFM. Flowrate typically ranges from 222,000-250,000 ACFM.

The WESP has two (2) abort stacks

Electrostatic Precipitator

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: WP02 (Wet) Electrostatic Precipitator #2

Emission Unit

Unit ID:	WP02
Unit Name:	(Wet) Electrostatic Precipitator #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Other To prolong the life of Dryer TO System #2 (C201)
Parameters Currently Monitored:	Secondary Amperage/Voltage Water Flow Rate

Primary Voltage:	300 volts
Primary Amperage:	30 amps
Secondary Voltage:	25 kiloVolts
Secondary Amperage:	150 milliamps
Spark Rate:	sparks per minute
Number Fields:	3 Fields
Inlet Gas Velocity:	235000
Water Flowrate:	140 gallons/min.
Type Of ESP:	WET

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	95 %

This Control Device controls Emissions from the following Equipment:

Electrostatic Precipitator

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: WP02 (Wet) Electrostatic Precipitator #2

Emission Unit	ES02, Energy System B
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Emission Unit	RD05, Rotary Dryer #5
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD06, Rotary Dryer #6
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD07, Rotary Dryer #7
Equipment Type	Dryers, Calciners, Kilns & Ovens

Description

(Wet) Electrostatic Precipitator to prolong the life of the dryer TO(s) System (C201)

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Primary amperage typically ranges from 5-60 amps, Primary voltage typically ranges from 10-600 volts. Secondary amperage ranges from 6-300 milliamps. Secondary voltage provided is the expected minimum.

Inlet gas velocity provided is actually an average value for inlet gas flowrate in ACFM. Flowrate typically ranges from 222,000-250,000 ACFM.

Either a wet or dry electrostatic precipitator [(W)ESP] will be installed to reduce PM loading to the Dryer TO System and prolong the life of the TO.

D10 - Control Devices

Filter Media

Facility: Norbord Georgia OSB　　Application: 2004 Title V Permit Modification

Emission Unit: BH03 System #1 (Forming Line/Prepress) Baghouse

Emission Unit

Unit ID:	BH03
Unit Name:	System #1 (Forming Line/Prepress) Baghouse

Model Information

Manufacturer:	Mac
Model Number:	Model 144MCF494
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	7500 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Filter Media

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: BH03 System #1 (Forming Line/Prepress) Baghouse

Pollutant	Overall Control Efficiency
Particulate Matter	99 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	FLPP, Forming Line & Prepress #1
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: BH04 System #2 (PG02) Baghouse

Emission Unit

Unit ID:	BH04
Unit Name:	System #2 (PG02) Baghouse

Model Information

Manufacturer:	Mac
Model Number:	Model 144MCF494
Date Manufactured or Reconstructed:	1990
Installation Date:	1990

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	7500 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	DB01, Dry Bin #1
Equipment Type	Miscellaneous

Emission Unit	DB02, Dry Bin #2
Equipment Type	Miscellaneous

Emission Unit	DB03, Dry Bin #3
Equipment Type	Miscellaneous

Emission Unit	DB04, Dry Bin #4
Equipment Type	Miscellaneous

Emission Unit	RS01, Rotary Screen #1
Equipment Type	Miscellaneous

Emission Unit	RS02, Rotary Screen #2
Equipment Type	Miscellaneous

Emission Unit	RS03, Rotary Screen #3
Equipment Type	Miscellaneous

Emission Unit	RS04, Rotary Screen #4
Equipment Type	Miscellaneous

Emission Unit	FB01, Flake Blender #1
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB02, Flake Blender #2
Equipment Type	Non-Reactive Bulk Mixing

Filter Media

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: BH04 System #2 (PG02) Baghouse

Emission Unit	FB03, Flake Blender #3
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB04, Flake Blender #4
Equipment Type	Non-Reactive Bulk Mixing

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: BH10 High Pressure Waste System Baghouse

Emission Unit

Unit ID:	BH10
Unit Name:	High Pressure Waste System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 42
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	900 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	HPWS, High Pressure Waste System #1
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: BH11 Sander System Baghouse

Emission Unit

Unit ID:	BH11
Unit Name:	Sander System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 460
Date Manufactured or Reconstructed:	1993
Installation Date:	1993

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	3750 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	TGSS, Tongue and Groove Sander System
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB

Application: 2004 Title V Permit Modification

Emission Unit: BH12 Tongue and Groove Line System Baghouse

Emission Unit

Unit ID:	BH12
Unit Name:	Tongue and Groove Line System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 200
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	3750 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	TGSL, Tongue and Groove Saw Line
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: BH13 Globe Saw System Baghouse

Emission Unit

Unit ID:	BH13
Unit Name:	Globe Saw System Baghouse

Model Information

Manufacturer:	Western Pneumatics
Model Number:	Model 386
Date Manufactured or Reconstructed:	1991
Installation Date:	1991

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	0
Inlet Gas Temperature:	0
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	3750 sq. ft.
Number Of Bags:	0 bags
Filter Operating Life:	0
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Filter Media

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	GLSS, Globe Line Saw System
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: C203 Resinated Fines Baghouse

Emission Unit

Unit ID:	C203
Unit Name:	Resinated Fines Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	FLP2, Forming Line & Prepress #2
Equipment Type	Miscellaneous

Emission Unit	FB05, Flake Blender #5
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB06, Flake Blender #6
Equipment Type	Non-Reactive Bulk Mixing

Emission Unit	FB07, Flake Blender #7
Equipment Type	Non-Reactive Bulk Mixing

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit: C204 Un-Resinated Fines Baghouse

Emission Unit

Unit ID:	C204
Unit Name:	Un-Resinated Fines Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	RS05, Rotary Screen #5
Equipment Type	Miscellaneous

Emission Unit	RS06, Rotary Screen #6
Equipment Type	Miscellaneous

Emission Unit	RS07, Rotary Screen #7
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB　　　　Application: 2004 Title V Permit Modification

Emission Unit: C205 Finishing Line Baghouse

Emission Unit

Unit ID:	C205
Unit Name:	Finishing Line Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	L2SD, Line #2 Sander System
Equipment Type	Miscellaneous

Emission Unit	L2SS, Line #2 Saw System
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: C206 Wet Strand Fines Baghouse

Emission Unit

Unit ID:	C206
Unit Name:	Wet Strand Fines Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: Product recovery

Parameters Currently Monitored: Pressure drop

Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	0
Filter Cleaning Method:	pulse air
Filter Area:	5000 sq. ft.
Number Of Bags:	425 bags
Filter Operating Life:	
Filter Replacement Frequency:	0
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	GB05, Green Bin #5
Equipment Type	Miscellaneous

Emission Unit	GB06, Green Bin #6
Equipment Type	Miscellaneous

Emission Unit	GB07, Green Bin #7
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: C207 Dry Fuel Storage Silo #2 Baghouse

Emission Unit

Unit ID:	C207
Unit Name:	Dry Fuel Storage Silo #2 Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop
Inlet Dew Temperature:	72 deg F
Inlet Gas Temperature:	72 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	7000 sq. ft.
Number Of Bags:	580 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	DFS2, Dry Fuel Storage Silo #2
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

Filter Media

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: C208 Blowline Baghouse

Emission Unit

Unit ID:	C208
Unit Name:	Blowline Baghouse

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason:	Product recovery
Parameters Currently Monitored:	Pressure drop
Inlet Dew Temperature:	93 deg F
Inlet Gas Temperature:	93 deg F
Pressure Drop:	1.3 in w.c.
Is Disposable:	No
Filter Cleaning Schedule:	
Filter Cleaning Method:	pulse air
Filter Area:	1400 sq. ft.
Number Of Bags:	112 bags
Filter Operating Life:	
Filter Replacement Frequency:	
Filter Replacement Description:	

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Particulate Matter	

Particulate Matter	99 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	DB05, Dry Bin #5
Equipment Type	Miscellaneous

Emission Unit	DB06, Dry Bin #6
Equipment Type	Miscellaneous

Emission Unit	DB07, Dry Bin #7
Equipment Type	Miscellaneous

Emission Unit	HPW2, High Pressure Waste System #2
Equipment Type	Miscellaneous

Description

Baghouse

Comments

The pressure drop across the baghouse is actually an average value. The unit is designed to operate at less than 5 inches w.c.

D10 - Control Devices

Oxidizer

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: RT63 Regenerative Thermal Oxidizer (RTO) #1

Emission Unit

Unit ID:	RT63
Unit Name:	Regenerative Thermal Oxidizer (RTO) #1

Model Information

Manufacturer:	Salem Engelhard
Model Number:	Model RTO-135-5V
Date Manufactured or Reconstructed:	1994
Installation Date:	1994

General Information

Control Reason: To comply with state or federal rule

Parameters Currently Monitored: Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	1500 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Thermal / Non-Catalytic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Volatile Organic Compounds	95 %
Formaldehyde	95 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	PRES, Press #1
Equipment Type	Miscellaneous

Description

Oxidizer

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: RT63 Regenerative Thermal Oxidizer (RTO) #1

Press #1 RTO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Oxidizer

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: C201 Thermal Oxidizer System (TO) #2

Emission Unit

Unit ID:	C201
Unit Name:	Thermal Oxidizer System (TO) #2

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: To comply with state or federal rule

Parameters Currently Monitored: Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	1300 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Thermal / Non-Catalytic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Volatile Organic Compounds	90 %
Carbon Monoxide	75 %
Particulate Matter	95 %

This Control Device controls Emissions from the following Equipment:

Emission Unit	ES02, Energy System B
Equipment Type	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment

Oxidizer

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Emission Unit: C201 Thermal Oxidizer System (TO) #2

Emission Unit	RD05, Rotary Dryer #5
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD06, Rotary Dryer #6
Equipment Type	Dryers, Calciners, Kilns & Ovens

Emission Unit	RD07, Rotary Dryer #7
Equipment Type	Dryers, Calciners, Kilns & Ovens

Description

Dryer System #2 TO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Pressure drops across the oxidizer typically ranges from 10-15 in. w.c.

This control device is used in conjunction with a (W)ESP. The (W)ESP removes particulate prior to the TO(s) in order to prolong the life of the TO(s).

Oxidizer

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: C202 Thermal Oxidizer System (TO) #3

Emission Unit

Unit ID:	C202
Unit Name:	Thermal Oxidizer System (TO) #3

Model Information

Manufacturer:	TBD
Model Number:	TBD
Date Manufactured or Reconstructed:	2005
Installation Date:	2005

General Information

Control Reason: To comply with state or federal rule

Parameters Currently Monitored: Combustion Temperature

Inlet Gas Flow:	scfm
Combustion Temperature:	600 deg F
Residence Time:	1 seconds
Pressure Drop:	12 in w.c.
Oxidizer Type:	Catalytic

Inlet Bed Temperature: 160 deg F

Outlet Bed Temperature: 200 deg F

Catalyst Life Expectancy:

Catalyst Regeneration Cycle:

Description Of Catalyst: Ceramic

This Control Device controls the following Pollutants:

Pollutant	Overall Control Efficiency
Volatile Organic Compounds	95 %
Carbon Monoxide	75 %

Oxidizer

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit: C202 Thermal Oxidizer System (TO) #3

Particulate Matter	85 %	

This Control Device controls Emissions from the following Equipment:

Emission Unit	PRS2, Press #2
Equipment Type	Miscellaneous

Description

Press #2 TO

Comments

Note that the operational parameters provided in this application are for informational purposes only and should not be used to established operational limitations.

Current designs call for the installation of a thermal catalytic oxidizer which can be operated in either catalytic or thermal modes. Data provided is for catalytic mode.

Pressure drops across the oxidizer typically ranges from 10-15 in. w.c.

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit:	FLPP, Forming Line & Prepress #1
Emission Type:	Miscellaneous
Control Device:	BH03, System #1 (Forming Line/Prepress) Baghouse
Control Type:	Filter Media

Emission Unit:	DB02, Dry Bin #2
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB01, Flake Blender #1
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB02, Flake Blender #2
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB03, Flake Blender #3
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	FB04, Flake Blender #4
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	RS01, Rotary Screen #1
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	RS02, Rotary Screen #2
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	RS03, Rotary Screen #3
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB01, Dry Bin #1
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB03, Dry Bin #3
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	DB04, Dry Bin #4
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	RS04, Rotary Screen #4
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media

Emission Unit:	HPWS, High Pressure Waste System #1
Emission Type:	Miscellaneous
Control Device:	BH10, High Pressure Waste System Baghouse
Control Type:	Filter Media

Emission Unit:	TGSS, Tongue and Groove Sander System
Emission Type:	Miscellaneous
Control Device:	BH11, Sander System Baghouse
Control Type:	Filter Media

Emission Unit:	TGSL, Tongue and Groove Saw Line
Emission Type:	Miscellaneous
Control Device:	BH12, Tongue and Groove Line System Baghouse
Control Type:	Filter Media

Emission Unit:	GLSS, Globe Line Saw System
Emission Type:	Miscellaneous
Control Device:	BH13, Globe Saw System Baghouse
Control Type:	Filter Media

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

Emission Unit:	RD07, Rotary Dryer #7
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer

Emission Unit:	PRS2, Press #2
Emission Type:	Miscellaneous
Control Device:	C202, Thermal Oxidizer System (TO) #3
Control Type:	Oxidizer

Emission Unit:	FB05, Flake Blender #5
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	FLP2, Forming Line & Prepress #2
Emission Type:	Miscellaneous
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	FB06, Flake Blender #6
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	FB07, Flake Blender #7
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	RS05, Rotary Screen #5
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	RS06, Rotary Screen #6
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	RS07, Rotary Screen #7
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media

Emission Unit:	L2SS, Line #2 Saw System
Emission Type:	Miscellaneous
Control Device:	C205, Finishing Line Baghouse
Control Type:	Filter Media

Emission Unit:	L2SD, Line #2 Sander System
Emission Type:	Miscellaneous
Control Device:	C205, Finishing Line Baghouse
Control Type:	Filter Media

Emission Unit:	GB06, Green Bin #6
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media

Emission Unit:	GB07, Green Bin #7
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media

Emission Unit:	GB05, Green Bin #5
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media

Emission Unit:	DFS2, Dry Fuel Storage Silo #2
Emission Type:	Miscellaneous
Control Device:	C207, Dry Fuel Storage Silo #2 Baghouse
Control Type:	Filter Media

Emission Unit:	DB05, Dry Bin #5
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

D11 - Emission Unit - Control Device Association

Emission Unit:	HPW2, High Pressure Waste System #2
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

Emission Unit:	DB06, Dry Bin #6
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

Emission Unit:	DB07, Dry Bin #7
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media

Emission Unit:	PRES, Press #1
Emission Type:	Miscellaneous
Control Device:	RT63, Regenerative Thermal Oxidizer (RTO) #1
Control Type:	Oxidizer

Emission Unit:	GB04, Green Bin #4
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	WELL, Wellons Wet Cell Burner
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit:	RD01, Rotary Dryer #1
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD02, Rotary Dryer #2
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD03, Rotary Dryer #3
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD04, Rotary Dryer #4
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	GB01, Green Bin #1
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	GB03, Green Bin #3
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit:	GB02, Green Bin #2
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator

Emission Unit:	RD07, Rotary Dryer #7
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator

D12 - Stack and Process Vent Summary

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Stack ID	**S001**
Stack Name	WESP #1 Stack
Stack Height	121 feet
All Emission Units Exhausting throught this Stack	WELL, RD01, RD02, RD03, RD04, GB01, GB02, GB03, GB04
All Pollution Control Devices Exhuasting through this Stack	WP01

Stack ID	**S003**
Stack Name	System #1 Baghouse Stack
Stack Height	20 feet
All Emission Units Exhausting throught this Stack	FLPP
All Pollution Control Devices Exhuasting through this Stack	BH03

Stack ID	**S004**
Stack Name	System #2 Baghouse Stack
Stack Height	20 feet
All Emission Units Exhausting throught this Stack	RS01, RS02, RS03, RS04, DB01, DB02, DB03, DB04, FB01, FB02, FB03, FB04
All Pollution Control Devices Exhuasting through this Stack	BH04

Stack ID	**S010**
Stack Name	HP Waste System Baghouse Stack
Stack Height	17 feet
All Emission Units Exhausting throught this Stack	HPWS
All Pollution Control Devices Exhuasting through this Stack	BH10

D12 - Stack and Process Vent Summary

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Stack ID	**S011**
Stack Name	Sander System Baghouse Stack
Stack Height	21 feet
All Emission Units Exhausting throught this Stack	TGSS
All Pollution Control Devices Exhuasting through this Stack	BH11

Stack ID	**S012**
Stack Name	T&G Line System Baghouse Stack
Stack Height	19 feet
All Emission Units Exhausting throught this Stack	TGSL
All Pollution Control Devices Exhuasting through this Stack	BH12

Stack ID	**S013**
Stack Name	Globe Saw System Baghouse Stack
Stack Height	21 feet
All Emission Units Exhausting throught this Stack	GLSS
All Pollution Control Devices Exhuasting through this Stack	BH13

Stack ID	**S063**
Stack Name	RTO #1 Stack
Stack Height	90 feet
All Emission Units Exhausting throught this Stack	PRES
All Pollution Control Devices Exhuasting through this Stack	RT63

D12 - Stack and Process Vent Summary

Facility: Norbord Georgia OSB — Application: 2004 Title V Permit Modification

Stack ID	**S201**
Stack Name	Dryer System #2 Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	RD05, RD06, RD07, ES02
All Pollution Control Devices Exhuasting through this Stack	C201

Stack ID	**S202**
Stack Name	Press #2 Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	PRS2
All Pollution Control Devices Exhuasting through this Stack	C202

Stack ID	**S203**
Stack Name	Resinated Fines Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	FLP2, FB05, FB06, FB07
All Pollution Control Devices Exhuasting through this Stack	C203

Stack ID	**S204**
Stack Name	Un-Resinated Fines Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	RS05, RS06, RS07
All Pollution Control Devices Exhuasting through this Stack	C204

Stack ID	**S205**
Stack Name	Finishing Line Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	L2SD, L2SS
All Pollution Control Devices Exhuasting through this Stack	C205

Stack ID	**S206**
Stack Name	Wet Strand Line Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	GB05, GB06, GB07
All Pollution Control Devices Exhuasting through this Stack	C206

Stack ID	**S207**
Stack Name	Dry Fuel Storage Silo #2 Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	DFS2
All Pollution Control Devices Exhuasting through this Stack	C207

Stack ID	**S208**
Stack Name	Blowline Baghouse Stack
Stack Height	50 feet
All Emission Units Exhausting throught this Stack	HPW2, DB05, DB06, DB07
All Pollution Control Devices Exhuasting through this Stack	C208

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit:	FLPP, Forming Line & Prepress #1
Emission Type:	Miscellaneous
Control Device:	BH03, System #1 (Forming Line/Prepress) Baghouse
Control Type:	Filter Media
Pollutants:	
Emission Unit:	DB02, Dry Bin #2
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	
Emission Unit:	FB01, Flake Blender #1
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	
Emission Unit:	FB02, Flake Blender #2
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	
Emission Unit:	FB03, Flake Blender #3
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB

Application: 2004 Title V Permit Modification

Emission Unit:	FB04, Flake Blender #4
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS01, Rotary Screen #1
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS02, Rotary Screen #2
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS03, Rotary Screen #3
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	DB01, Dry Bin #1
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit:	DB03, Dry Bin #3
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	DB04, Dry Bin #4
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS04, Rotary Screen #4
Emission Type:	Miscellaneous
Control Device:	BH04, System #2 (PG02) Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	HPWS, High Pressure Waste System #1
Emission Type:	Miscellaneous
Control Device:	BH10, High Pressure Waste System Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	TGSS, Tongue and Groove Sander System
Emission Type:	Miscellaneous
Control Device:	BH11, Sander System Baghouse
Control Type:	Filter Media
Pollutants:	

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit:	TGSL, Tongue and Groove Saw Line
Emission Type:	Miscellaneous
Control Device:	BH12, Tongue and Groove Line System Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	GLSS, Globe Line Saw System
Emission Type:	Miscellaneous
Control Device:	BH13, Globe Saw System Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer
Pollutants:	VOC CO PM HAP

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer
Pollutants:	VOC CO PM HAP

Emission Unit:	RD07, Rotary Dryer #7
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer
Pollutants:	VOC CO PM HAP

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	C201, Thermal Oxidizer System (TO) #2
Control Type:	Oxidizer
Pollutants:	VOC CO PM HAP

Emission Unit:	PRS2, Press #2
Emission Type:	Miscellaneous
Control Device:	C202, Thermal Oxidizer System (TO) #3
Control Type:	Oxidizer
Pollutants:	CO HAP

Emission Unit:	FB05, Flake Blender #5
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	FLP2, Forming Line & Prepress #2
Emission Type:	Miscellaneous
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	FB06, Flake Blender #6
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB

Application: 2004 Title V Permit Modification

Emission Unit:	FB07, Flake Blender #7
Emission Type:	Non-Reactive Bulk Mixing
Control Device:	C203, Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS05, Rotary Screen #5
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS06, Rotary Screen #6
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	RS07, Rotary Screen #7
Emission Type:	Miscellaneous
Control Device:	C204, Un-Resinated Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	L2SS, Line #2 Saw System
Emission Type:	Miscellaneous
Control Device:	C205, Finishing Line Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	L2SD, Line #2 Sander System
Emission Type:	Miscellaneous
Control Device:	C205, Finishing Line Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	GB06, Green Bin #6
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	GB07, Green Bin #7
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	GB05, Green Bin #5
Emission Type:	Miscellaneous
Control Device:	C206, Wet Strand Fines Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	DFS2, Dry Fuel Storage Silo #2
Emission Type:	Miscellaneous
Control Device:	C207, Dry Fuel Storage Silo #2 Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	DB05, Dry Bin #5
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	HPW2, High Pressure Waste System #2
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	DB06, Dry Bin #6
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	DB07, Dry Bin #7
Emission Type:	Miscellaneous
Control Device:	C208, Blowline Baghouse
Control Type:	Filter Media
Pollutants:	

Emission Unit:	PRES, Press #1
Emission Type:	Miscellaneous
Control Device:	RT63, Regenerative Thermal Oxidizer (RTO) #1
Control Type:	Oxidizer
Pollutants:	

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB Application: 2004 Title V Permit Modification

Emission Unit:	GB04, Green Bin #4
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	WELL, Wellons Wet Cell Burner
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	RD01, Rotary Dryer #1
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	RD02, Rotary Dryer #2
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	RD03, Rotary Dryer #3
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

D11 - Emission Unit - Control Device Association

Emission Unit:	RD04, Rotary Dryer #4
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	GB01, Green Bin #1
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	GB03, Green Bin #3
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	GB02, Green Bin #2
Emission Type:	Miscellaneous
Control Device:	WP01, Wet Electrostatic Precipitator #1
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	RD07, Rotary Dryer #7
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator
Pollutants:	

D11 - Emission Unit - Control Device Association

Facility: Norbord Georgia OSB | Application: 2004 Title V Permit Modification

Emission Unit:	ES02, Energy System B
Emission Type:	Boilers, Furnaces & Other Indirect Contact Heat Generating Equipment
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	RD05, Rotary Dryer #5
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator
Pollutants:	

Emission Unit:	RD06, Rotary Dryer #6
Emission Type:	Dryers, Calciners, Kilns & Ovens
Control Device:	WP02, (Wet) Electrostatic Precipitator #2
Control Type:	Electrostatic Precipitator
Pollutants:	

Summary of Emissions - Units, Groups

Facility: Norbord Georgia OSB   Application: 2004 Title V Permit Modification

Emission Unit: DFS2 Dry Fuel Storage Silo #2

Pollutant   Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: DFS2 Dry Fuel Storage Silo #2

Pollutant   Particulate Matter

Numerical Emission Limit or Standard:	1.6pounds/hour
Maximum Actual Emissions in Units of the Standard:	1.6pounds/hour
Maximum Actual Emissions in Tons per Year:	7.01 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: ES02 Energy System B

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	0.1lb/MMBtu
Maximum Actual Emissions in Units of the Standard:	0.1lb/MMBtu
Maximum Actual Emissions in Tons per Year:	153 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Permit limit
Applicable Federal Standard:	NSPS Subpart Dc or Db (to be determined)
Applicable State Standard:	N/A
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: FLPP Forming Line & Prepress #1

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	3.3.1, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: FLPP Forming Line & Prepress #1

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	0.04pounds/hour
Maximum Actual Emissions in Units of the Standard:	0.04pounds/hour
Maximum Actual Emissions in Tons per Year:	0.18 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.2.2, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: GLSS Globe Line Saw System

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	3.3.1, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: GLSS Globe Line Saw System

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	0.53pounds/hour
Maximum Actual Emissions in Units of the Standard:	0.53pounds/hour
Maximum Actual Emissions in Tons per Year:	2.32 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.2.6, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: HPWS High Pressure Waste System #1

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	3.3.1, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: HPWS High Pressure Waste System #1

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	1.14pounds/hour
Maximum Actual Emissions in Units of the Standard:	1.14pounds/hour
Maximum Actual Emissions in Tons per Year:	4.99 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.2.7, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG01 Wood Flake Dryer System #1

Pollutant Carbon Monoxide

Numerical Emission Limit or Standard:	130pounds/hour
Maximum Actual Emissions in Units of the Standard:	130pounds/hour
Maximum Actual Emissions in Tons per Year:	569 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	3.3.4, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG01 Wood Flake Dryer System #1

Pollutant Nitrogen Oxides

Numerical Emission Limit or Standard:	30pounds/hour
Maximum Actual Emissions in Units of the Standard:	30pounds/hour
Maximum Actual Emissions in Tons per Year:	131 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	3.3.3, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG01 Wood Flake Dryer System #1

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	70pounds/hour
Maximum Actual Emissions in Units of the Standard:	70pounds/hour
Maximum Actual Emissions in Tons per Year:	310 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.3.2, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG01 Wood Flake Dryer System #1

Pollutant Volatile Organic Compounds

Numerical Emission Limit or Standard:	320pounds/hour
Maximum Actual Emissions in Units of the Standard:	320pounds/hour
Maximum Actual Emissions in Tons per Year:	1402 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	3.3.5, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG02 Wood Flake Preperation System #1

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	3.3.1, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG02 Wood Flake Preperation System #1

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	0.1pounds/hour
Maximum Actual Emissions in Units of the Standard:	0.1pounds/hour
Maximum Actual Emissions in Tons per Year:	0.44 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.2.3, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG03 Wood Flake Dryers & Energy System #2

Pollutant Carbon Monoxide

Numerical Emission Limit or Standard:	78.4pounds/hour
Maximum Actual Emissions in Units of the Standard:	78.4pounds/hour
Maximum Actual Emissions in Tons per Year:	343 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Vendor estimate
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG03 Wood Flake Dryers & Energy System #2

Pollutant Nitrogen Oxides

Numerical Emission Limit or Standard:	78.4pounds/hour
Maximum Actual Emissions in Units of the Standard:	78.4pounds/hour
Maximum Actual Emissions in Tons per Year:	343 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Vendor estimate
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG03 Wood Flake Dryers & Energy System #2

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	35pounds/hour
Maximum Actual Emissions in Units of the Standard:	35pounds/hour
Maximum Actual Emissions in Tons per Year:	153 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Vendor estimate
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG03 Wood Flake Dryers & Energy System #2

Pollutant Volatile Organic Compounds

Numerical Emission Limit or Standard:	59.8pounds/hour
Maximum Actual Emissions in Units of the Standard:	59.8pounds/hour
Maximum Actual Emissions in Tons per Year:	262 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Engineering estimate
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG04 Resinated Fines

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG04 Resinated Fines

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	1pounds/hour
Maximum Actual Emissions in Units of the Standard:	1pounds/hour
Maximum Actual Emissions in Tons per Year:	4.38 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG05 Unresinated Fines

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG05 Unresinated Fines

Pollutant **Particulate Matter**

Numerical Emission Limit or Standard:	1pounds/hour
Maximum Actual Emissions in Units of the Standard:	1pounds/hour
Maximum Actual Emissions in Tons per Year:	4.38 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG06 Finishing Line #2

Pollutant **Opacity**

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG06 Finishing Line #2

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	1pounds/hour
Maximum Actual Emissions in Units of the Standard:	1pounds/hour
Maximum Actual Emissions in Tons per Year:	4.38 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG07 Wet Strand Fines

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG07 Wet Strand Fines

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	1pounds/hour
Maximum Actual Emissions in Units of the Standard:	1pounds/hour
Maximum Actual Emissions in Tons per Year:	4.38 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PG08 Blowline

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PRES Press #1

Pollutant Formaldehyde

Numerical Emission Limit or Standard:	0.35pounds/hour
Maximum Actual Emissions in Units of the Standard:	0.35pounds/hour
Maximum Actual Emissions in Tons per Year:	1.6 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	N/A
Applicable State Standard:	GA Air Toxics
Applicable Permit Condition(s):	3.2.8, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	Yes
Identify the federal regulation, state regulation, or the permit condition that requiress the work practice or design	Conditions 3.2.10 & 3.3.12
Describe the work practice or design standard	Route exhaust from PRES to RT63 during all periods of operation; maintain at least a 95% destruction effiency using RT63
Identify the federal regulation, state regulation, or the permit condition that requiress the work practice or design	Conditions 3.2.10 & 3.3.12
Describe the work practice or design standard	Route exhaust from PRES to RT63 during all periods of operation; maintain at least a 95% destruction effiency using RT63
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PRES Press #1

Pollutant Formaldehyde

Numerical Emission Limit or Standard:	1.6tons/12 consecutive months
Maximum Actual Emissions in Units of the Standard:	1.6tons/12 consecutive months
Maximum Actual Emissions in Tons per Year:	1.6 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	N/A
Applicable State Standard:	GA Air Toxics
Applicable Permit Condition(s):	3.2.9, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	Yes
Identify the federal regulation, state regulation, or the permit condition that requiress the work practice or design	Conditions 3.2.10 & 3.3.12
Describe the work practice or design standard	Route exhaust from PRES to RT63 during all periods of operation; maintain at least a 95% destruction effiency using RT63
Identify the federal regulation, state regulation, or the permit condition that requiress the work practice or design	Conditions 3.2.10 & 3.3.12
Describe the work practice or design standard	Route exhaust from PRES to RT63 during all periods of operation; maintain at least a 95% destruction effiency using RT63
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PRES Press #1

Pollutant **Volatile Organic Compounds**

Numerical Emission Limit or Standard:	10tons/12 consecutive months
Maximum Actual Emissions in Units of the Standard:	10tons/12 consecutive months
Maximum Actual Emissions in Tons per Year:	10 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Stack testing
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	3.3.10, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	Yes
Identify the federal regulation, state regulation, or the permit condition that requiress the work practice or design	Conditions 3.3.11 & 3.3.12
Describe the work practice or design standard	Route exhaust from PRES to RT63 during all periods of operation; maintain at least a 95% destruction effiency using RT63
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: PRS2 Press #2

Pollutant **Volatile Organic Compounds**

Numerical Emission Limit or Standard:	50.1tons/12 consecutive months
Maximum Actual Emissions in Units of the Standard:	50.1tons/12 consecutive months
Maximum Actual Emissions in Tons per Year:	50.1 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Engineering estimate
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	N/A
Applicable Permit Condition(s):	N/A
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: TGSL Tongue and Groove Saw Line

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	3.3.1, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: TGSL Tongue and Groove Saw Line

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	0.18pounds/hour
Maximum Actual Emissions in Units of the Standard:	0.18pounds/hour
Maximum Actual Emissions in Tons per Year:	0.79 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.2.5, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: TGSS Tongue and Groove Sander System

Pollutant Opacity

Numerical Emission Limit or Standard:	20% Opacity
Maximum Actual Emissions in Units of the Standard:	20% Opacity
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Visual inspection
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (b)
Applicable Permit Condition(s):	3.3.1, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: TGSS Tongue and Groove Sander System

Pollutant Particulate Matter

Numerical Emission Limit or Standard:	0.43pounds/hour
Maximum Actual Emissions in Units of the Standard:	0.43pounds/hour
Maximum Actual Emissions in Tons per Year:	1.88 tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Mass balance
Applicable Federal Standard:	40 CFR 52.21
Applicable State Standard:	Rule (e)
Applicable Permit Condition(s):	3.2.4, V-02-0
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Emission Unit: WELL Wellons Wet Cell Burner

Pollutant Sulfur Dioxide

Numerical Emission Limit or Standard:	2.5
Maximum Actual Emissions in Units of the Standard:	2.5
Maximum Actual Emissions in Tons per Year:	tons/yr
Method the Emissions were determined (CEM, Stack Testing, Mass Balance, etc.):	Inherent due to wood fuel and natural gas combustion
Applicable Federal Standard:	N/A
Applicable State Standard:	Rule (g)
Applicable Permit Condition(s):	3.4.1, V-02-0 (2.5wt% fuel sulfur content limit)
Is this a Proposed Voluntary Limit?	No
Is there a Work Practice or Design Standard?	No
Is this in Compliance with the Standard(s) ?	Yes

Compliance Determination Procedures: Monitoring

Emission Unit: DFS2Dry Fuel Storage S	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C207, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: DFS2Dry Fuel Storage S	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C207 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: FLPPForming Line & Pr	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH03, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: FLPPForming Line & Pr	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH03 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: GLSSGlobe Line Saw Sy	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH13 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: GLSSGlobe Line Saw Sy	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH13, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: HPWSHigh Pressure Wa	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH10 exhuast, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: HPWSHigh Pressure Wa	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH10, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	WP01, water flow rate at the mist flow pump of the
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.c, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	WP01, temperature of the gas stream at the outlet
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.d, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	Pollutant: Other
Monitoring Code:	M24
Monitoring Code Description:	Recordkeeping of production, raw material, or process input related information.
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	RD01-RD04, daily average hourly wet process inpu
Averaging Time:	1 Hours
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	6.2.1, V-02-0
Comments or Other Information:	

Emission Unit: PG01Wood Flake Dryer	Pollutant: Particulate Matter
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	WP01, secondary voltage for each field of the WES
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.c, V-02-0
Comments or Other Information:	

Emission Unit: PG02Wood Flake Preper	Pollutant: Particulate Matter
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH04 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: PG02Wood Flake Preper	Pollutant: Particulate Matter
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH04, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: PG03Wood Flake Dryers	Pollutant: Volatile Organic Compounds
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C201, combustion zone temperature
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	Combustion zone temperature also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: PG03Wood Flake Dryers	Pollutant: Particulate Matter
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C201 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG04Resinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C203 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG04Resinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C203, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG05Unresinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C204, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG05Unresinated Fines	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C204 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG06Finishing Line #2	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C205 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG06Finishing Line #2	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C205, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG07Wet Strand Fines	Pollutant: Particulate Matter
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C206, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG07Wet Strand Fines	Pollutant: Particulate Matter
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C206 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG08Blowline	**Pollutant: Particulate Matter**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C208, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PG08Blowline	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C208 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	

Emission Unit: PRESPress #1	Pollutant: Volatile Organic Compounds
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	RT63, inlet of, or pressure drop across RTO
Averaging Time:	12 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.b, V-02-0
Comments or Other Information:	Pressure drop also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: PRESPress #1	Pollutant: Volatile Organic Compounds
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	RT63, combustion zone temperature
Averaging Time:	8 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.1.a, V-02-0
Comments or Other Information:	Combustion zone temperature also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: PRS2Press #2	**Pollutant: Volatile Organic Compounds**
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	No
Location Where Monitoring is Taking Place:	C202, combustion zone temperature
Averaging Time:	3 Hours
Data Acquisition Frequency:	4 Hours
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	Proposed
Comments or Other Information:	Combustion zone temperature also monitored as an operating parameter related to CO, PM, & HAP emissions.

Emission Unit: TGSLTongue and Groov	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH12 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Emission Unit: TGSLTongue and Groov	Pollutant: Particulate Matter
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH12, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: TGSSTongue and Groov	Pollutant: Particulate Matter
Monitoring Code:	M23
Monitoring Code Description:	Monitoring of control equipment and/or process operation parameters. [Note: For this entry, in addition to giving the code, List all parameters which will have specific limitations.]
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH11, pressure drop across baghouse
Averaging Time:	
Data Acquisition Frequency:	1 Weeks
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.6.a, V-02-0
Comments or Other Information:	

Emission Unit: TGSSTongue and Groov	**Pollutant: Particulate Matter**
Monitoring Code:	M19
Monitoring Code Description:	Monitoring of Visible Emissions by use of Method 22
Is this Monitoring Already Taking Place and Being Performed?	Yes
Location Where Monitoring is Taking Place:	BH11 exhaust, visible emissions check
Averaging Time:	
Data Acquisition Frequency:	1 Days
Description of the Types of Records Being Kept with this Monitoring:	Paper or electronic logs
Reporting Frequency:	6 Months
Regulation or Permit Condition that Requires this Monitoring:	5.2.7, V-02-0
Comments or Other Information:	

Compliance Determination Procedures: Reference Test Methods

Compliance Plan for a non-Compliant Emission Unit or Group

4244 International Parkway
Suite 120
Atlanta, Georgia 30354-3906
404-363-7000

Certifications and Signatures

Facility Name: **Norbord Georgia OSB**

Project Name: **2004 Title V Permit Modification**

AIRS Number: **130810054**

Submittal File Name: **130810054_20041105.mdb**

COMPUTER DISK VIRUS EXAMINATION CERTIFICATION:
I certify that, to the best of my knowledge, the completed electronic application disk has been inspected and found free of any known viruses.

Signature:____ Date:________________

Name (print):____

Offical Title:____

SOFTWARE USAGE CERTIFICATION:
I certify that the software used to complete the Georgia Title V application was used as provided by the Georgia Environmental Protection Division, Air Protection Branch and was unaltered in any way. I understand that the submission of a Title V (Part 70) application completed using any altered version of the provided software constitutes the submission of an incomplete application and that such action may be subject to enforcement by the Georgia Air Protection Branch and/or the US EPA.

CERTIFICATION OF COMPLIANCE:
Except as stated on the Compliance Plan For a Non-Compliant Emission Unit or Group form of this application, I hereby certify that this facility is in compliance with all applicable requirements effective as of the date of this certification and will continue to comply with such requirements. For applicable requirements promulgated as of the date of this certification, that will become effective during the permit term, I further certify that, except as stated on the Compliance Plan For a Non-Compliant Emission Unit or Group form of this application, this facility will comply with such requirements and will continue to comply with such requirements.

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

Unless otherwise required by the Director, compliance certifications will be submitted to the Director at least annually.

SIGNATURE OF RESPONSIBLE OFFICIAL:

Signature:____ Date:________________

Name (print):____

Offical Title:____

Address:____

____

Notary Public Certification of Responsible Official's Signature:

Signature of Notary Public:____

FOR APPLICANT'S USE
Revision #: 0
Date: 11 / 05 / 2004
Page 1 of 5
Source Designation: C201/C202

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
AIR PROTECTION BRANCH
4244 INTERNATIONAL PARKWAY, SUITE 120
ATLANTA, GEORGIA 30354

COMPLIANCE ASSURANCE MONITORING (CAM) PLAN	***FOR AGENCY USE ONLY***
	AIRS NUMBER:
	PERMIT #:
	APPLICATION NUMBER:

FOR INFORMATION ABOUT THE CAM RULE AND THIS FORM, PLEASE REFER TO 40 CFR PART 64. ADDITIONAL INFORMATION (INCLUDING GUIDANCE DOCUMENTS) MAY ALSO BE FOUND AT http://www.epa.gov/ttn/emc/cam.html

SOURCE INFORMATION

1) SOURCE NAME: Norbord Georgia - Cordele Oriented Strandboard Mill	
2) DATE FORM PREPARED: 11 / 05 / 2004	3) AIRS NUMBER: 04-13-08100054

BASIS OF CAM SUBMITTAL

4) MARK THE APPROPRIATE BOX BELOW AS TO WHY THIS CAM PLAN IS BEING SUBMITTED AS PART OF AN APPLICATION FOR A TITLE V PERMIT:

☐ RENEWAL APPLICATION. **ALL** PSEUs (POLLUTANT-SPECIFIC EMISSIONS UNITS CONSIDERED SEPARATELY WITH RESPECT TO EACH REGULATED AIR POLLUTANT) FOR WHICH A CAM PLAN HAS NOT YET BEEN APPROVED NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL.

☒ INITIAL APPLICATION (SUBMITTED AFTER 4/20/98). **ONLY** LARGE PSEUs (PSEUs WITH POTENTIAL POST-CONTROL DEVICE EMISSIONS OF AN APPLICABLE REGULATED AIR POLLUTANT THAT ARE EQUAL TO OR GREATER THAN MAJOR SOURCE THRESHOLD LEVELS) NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** LARGE PSEUs BEING MODIFIED AFTER 4/20/98 NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. FOR LARGE PSEUs WITH AN APPROVED CAM PLAN, ONLY ADDRESS THE APPROPRIATE MONITORING REQUIREMENTS AFFECTED BY THE SIGNIFICANT MODIFICATION.

CAM APPLICABILITY DETERMINATION

5) DOES THE SOURCE HAVE A PSEU THAT IS SUBJECT TO CAM, 40 CFR PART 64, WHICH MUST BE ADDRESSED IN THIS CAM PLAN SUBMITTAL? TO DETERMINE APPLICABILITY, A PSEU MUST MEET **ALL** OF THE FOLLOWING CRITERIA (IF NO, THEN THE REMAINDER OF THIS FORM NEED NOT BE COMPLETED): ☒ YES ☐ NO

a. THE PSEU IS LOCATED AT A MAJOR SOURCE THAT IS REQUIRED TO OBTAIN A TITLE V PERMIT;

b. THE PSEU IS SUBJECT TO AN EMISSION LIMITATION OR STANDARD FOR THE APPLICABLE REGULATED AIR POLLUTANT THAT IS NOT EXEMPT;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:
- NSPS (40 CFR PART 60) OR NESHAP (40 CFR PARTS 61 AND 63) PROPOSED AFTER 11/15/1990.
- STRATOSPHERIC OZONE PROTECTION REQUIREMENTS.
- ACID RAIN PROGRAM REQUIREMENTS.
- EMISSION LIMITATIONS OR STANDARDS FOR WHICH A GEORGIA AIR QUALITY PERMIT SPECIFIES A CONTINUOUS COMPLIANCE DETERMINATION METHOD, AS DEFINED IN 40 CFR 64.1.
- AN EMISSION CAP THAT MEETS THE REQUIREMENTS SPECIFIED IN 40 CFR 70.4(b)(12).

c. THE PSEU USES AN ADD-ON CONTROL DEVICE (AS DEFINED IN 40 CFR 64.1) TO ACHIEVE COMPLIANCE WITH AN EMISSION LIMITATION OR STANDARD;

d. THE PSEU HAS POTENTIAL PRE-CONTROL DEVICE EMISSIONS OF THE APPLICABLE REGULATED AIR POLLUTANT THAT ARE EQUAL TO OR GREATER THAN THE PART 70 MAJOR SOURCE THRESHOLD LEVELS; AND

e. THE PSEU IS NOT AN EXEMPT BACKUP UTILITY POWER EMISSIONS UNIT THAT IS MUNICIPALLY-OWNED.

6) [a]BACKGROUND DATA AND INFORMATION

COMPLETE THE FOLLOWING TABLE FOR **ALL** PSEUs THAT NEED TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. THIS SECTION IS TO BE USED TO PROVIDE BACKGROUND DATA AND INFORMATION FOR EACH PSEU IN ORDER TO SUPPLEMENT THE SUBMITTAL REQUIREMENTS SPECIFIED IN 40 CFR 64.4. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY.

PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b]EMISSION LIMITATION OR STANDARD	[c]MONITORING REQUIREMENT
ES02, RD05, RD06, RD07	Energy System B, Rotary Dryers No. 5, No. 6, & No. 7*	CO, PM, VOC, HAP	C2O1	Proposed BACT limit: 78.4 lb CO/hr, 28.5 lb PM/hr, 59.8 lb VOC/hr (all limits combined for units controlled by C201)	3- Hour Block Average (continuous) monitoring of the combustion zone temperature, Daily visible emissions determination
PRS2	Press No. 2[+]	CO, HAP	C2O2	Proposed BACT limit: 24.5 lb CO/hr, 4.0 lb PM/hr, 11.4 lb VOC/hr	3- Hour Block Average (continuous) monitoring of the combustion zone temperature
* Permit application is to install up to three new rotary dryers depending on the final design specifications. Regardless of the number of new dryers (i.e., two or three), the exhaust will be routed to a TO system. [+] Post-control potential emissions of PM and VOC from the new press are less than the major source threshold. Therefore, CAM requirements only apply to CO and HAP emissions. CAM requirements for PM and VOC emissions will be submitted along with either the next significant modification to the new press, or at the Title V renewal.					
EXAMPLE BOILER NO. 1	WOOD-FIRED BOILER	PM	MULTICLONE	391-3-1-.02(2)(d)2.(ii); $0.5(10/R)^{0.5}$ lb/mmBtu	MONITOR PRESSURE DROP ACROSS MULTICLONE WEEKLY INSPECTION OF MULTICLONE

[a]IF A CONTROL DEVICE IS COMMON TO MORE THAN ONE PSEU, ONE MONITORING PLAN MAY BE SUBMITTED FOR THE CONTROL DEVICE WITH THE AFFECTED PSEUS IDENTIFIED AND ANY CONDITIONS THAT MUST BE MAINTAINED OR MONITORED IN ACCORDANCE WITH 64.3(a). IF A SINGE PSEU IS CONTROLLED BY MORE THAN ONE CONTROL DEVICE SIMILAR IN DESIGN AND OPERATION, ONE MONITORING PLAN FOR THE APPLICABLE CONTROL DEVICES MAY BE SUBMITTED WITH THE APPLICABLE CONTROL DEVICES IDENTIFIED AND ANY CONDITIONS THAT MUST BE MAINTAINED OR MONITORED IN ACCORDANCE WITH 64.3(a).

[b]INDICATE THE EMISSION LIMITATION OR STANDARD FOR ANY APPLICABLE REQUIREMENT THAT CONSTITUTES AN EMISSION LIMITATION, EMISSION STANDARD, OR STANDARD OF PERFORMANCE (AS DEFINED IN 40 CFR 64.1).

[c]INDICATE THE MONITORING REQUIREMENTS FOR THE PSEU THAT ARE REQUIRED BY AN APPLICABLE REGULATION OR PERMIT CONDITION.

CAM MONITORING APPROACH CRITERIA			
COMPLETE THIS SECTION FOR **EACH** PSEU THAT NEEDS TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. THIS SECTION MAY BE COPIED AS NEEDED FOR EACH PSEU. THIS SECTION IS TO BE USED TO PROVIDE MONITORING DATA AND INFORMATION FOR EACH INDICATOR SELECTED FOR EACH PSEU IN ORDER TO MEET THE MONITORING DESIGN CRITERIA SPECIFIED IN 40 CFR 64.3 AND 64.4. IF MORE THAN TWO INDICATORS ARE BEING SELECTED FOR A PSEU OR IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY WITH THE APPROPRIATE PSEU DESIGNATION, POLLUTANT, AND INDICATOR NOs.			
7a) PSEU DESIGNATION: C201/C202	**7b) POLLUTANT:** CO, PM, VOC, HAP (PM, VOC for C201 only)	**7c) [a]INDICATOR NO. 1:** TO combustion zone temperature	**7d) [a]INDICATOR NO. 2:** Visible Emissions
8a) GENERAL CRITERIA DESCRIBE THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:		Combustion zone temperature is measured by combustion chamber thermocouples	Visible emissions inspection by facility personnel
[b]ESTABLISH THE APPROPRIATE INDICATOR RANGE OR THE PROCEDURES FOR ESTABLISHING THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:		Acceptable minimum combustion temperature ranges are greater than 1300°F (dryers), or 600°F (press) or minimum established during the most recent performance testing	Visible emissions should be maintained below the opacity limit of 20%
8b) PERFORMANCE CRITERIA PROVIDE THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, SUCH AS DETECTOR LOCATION, INSTALLATION SPECIFICATIONS, AND MINIMUM ACCEPTABLE ACCURACY:		Appropriate thermocouples installed in the combustion chamber per the manufacturer's design, the thermocouples are designed to be accurate to 4 degrees F or +/- 0.75%	Visible emissions inspection by trained facility personnel
[c]FOR NEW OR MODIFIED MONITORING EQUIPMENT, PROVIDE VERIFICATION PROCEDURES, INCLUDING MANUFACTURER'S RECOMMENDATIONS, TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:		Calibrations performed in accordance with the manufacturer's recommendations	Visual observation method as per our State permit condition 5.2.7 a.
PROVIDE QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ARE ADEQUATE TO ENSURE THE CONTINUING VALIDITY OF THE DATA, (i.e., DAILY CALIBRATIONS, VISUAL INSPECTIONS, ROUTINE MAINTENANCE, CGA, RATA, ETC.):		Operators check the data for completeness, legibility, reasonableness, and accuracy on a daily basis	Operators check the data for completeness, legibility, reasonableness, and accuracy on a daily basis
[d]PROVIDE THE MONITORING FREQUENCY:		Inlet temperature is recorded at least every 15 minutes and archived in one hour averages that are then used to compute a 3-hour average	Visible emissions inspections conducted daily
PROVIDE THE DATA COLLECTION PROCEDURES THAT WILL BE USED:		Records of parametric monitoring, required maintenance, and corrective actions will be maintained at the mill site, either in organized paper files or electronically. The data will be retained for the period of time specified in the state permit, or for two (2) years, whichever is greater	Records of visible inspections, required maintenance, and corrective actions will be maintained at the mill site, either in organized paper files or electronically. The data will be retained for the period of time specified in the state permit, or for two (2) years, whichever is greater
PROVIDE THE DATA AVERAGING PERIOD FOR THE PURPOSE OF DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:		Two (2) 3-hr block averages during which average combustion temperature is more than 50 degrees F less than 1300°F (dryers), 600°F (press) or the average temperature established during the most recent performance test	Two (2) consecutive daily determination of visible emissions greater than 20% (excluding steam) from the exhaust stack

[a]DESCRIBE ALL INDICATORS TO BE MONITORED WHICH SATISFIES 40 CFR 64.3(a). INDICATORS OF EMISSION CONTROL PERFORMANCE FOR THE CONTROL DEVICE AND ASSOCIATED CAPTURE SYSTEM MAY INCLUDE MEASURED OR PREDICTED EMISSIONS (INCLUDING VISIBLE EMISSIONS OR OPACITY), PROCESS AND CONTROL DEVICE OPERATING PARAMETERS THAT AFFECT CONTROL DEVICE (AND CAPTURE SYSTEM) EFFICIENCY OR EMISSION RATES, OR RECORDED FINDINGS OF INSPECTION AND MAINTENANCE ACTIVITIES.

[b]INDICATOR RANGES MAY BE BASED ON A SINGLE MAXIMUM OR MINIMUM VALUE OR AT MULTIPLE LEVELS THAT ARE RELEVANT TO DISTINCTLY DIFFERENT OPERATING CONDITIONS, EXPRESSED AS A FUNCTION OF PROCESS VARIABLES, EXPRESSED AS MAINTAINING THE APPLICABLE INDICATOR IN A PARTICULAR OPERATIONAL STATUS OR DESIGNATED CONDITION, OR ESTABLISHED AS INTERDEPENDENT BETWEEN MORE THAN ONE INDICATOR. FOR CEMS, COMS, OR PEMS, INCLUDE THE MOST RECENT CERTIFICATION TEST FOR THE MONTIOR.

[c]THE VERIFICATION FOR OPERATIONAL STATUS SHOULD INCLUDE PROCEDURES FOR INSTALLATION, CALIBRATION, AND OPERATION OF THE MONITORING EQUIPMENT, CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, NECESSARY TO CONFIRM THE MONITORING EQUIPMENT IS OPERATIONAL PRIOR TO THE COMMENCEMENT OF THE REQUIRED MONITORING.

[d]EMISSION UNITS WITH POSTCONTROL PTE ≥ 100 PERCENT OF THE AMOUNT CLASSIFYING THE SOURCE AS A MAJOR SOURCE MUST COLLECT FOUR OR MORE VALUES PER HOUR TO BE AVERAGED. A REDUCED DATA COLLECTION FREQUENCY MAY BE APPROVED IN LIMITED CIRCUMSTANCES. OTHER EMISSION UNITS MUST COLLECT DATA AT LEAST ONCE PER 24 HOUR PERIOD.

RATIONALE AND JUSTIFICATION

COMPLETE THIS SECTION FOR **EACH** PSEU THAT NEEDS TO BE ADDRESSED IN THIS CAM PLAN SUBMITTAL. THIS SECTION MAY BE COPIED AS NEEDED FOR EACH PSEU. THIS SECTION IS TO BE USED TO PROVIDE RATIONALE AND JUSTIFICATION FOR THE SELECTION OF EACH INDICATOR AND MONITORING APPROACH AND EACH INDICATOR RANGE IN ORDER TO MEET THE SUBMITTAL REQUIREMENTS SPECIFIED IN 40 CFR 64.4.

9a) PSEU DESIGNATION:	9b) REGULATED AIR POLLUTANT:
C201/C202	CO, PM, VOC, HAP (PM, VOC for C201 only)

10) INDICATORS AND THE MONITORING APPROACH: PROVIDE THE RATIONALE AND JUSTIFICATION FOR THE SELECTION OF THE INDICATORS AND THE MONITORING APPROACH USED TO MEASURE THE INDICATORS. ALSO PROVIDE ANY DATA SUPPORTING THE RATIONALE AND JUSTIFICATION. EXPLAIN THE REASONS FOR ANY DIFFERENCES BETWEEN THE VERIFICATION OF OPERATIONAL STATUS OR THE QUALITY ASSURANCE AND CONTROL PRACTICES PROPOSED AND THE MANUFACTURER'S RECOMMENDATIONS. (IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY WITH THE APPROPRIATE PSEU DESIGNATION AND POLLUTANT):

TO combustion temperature is the parameter most closely related to emissions from the TOs connected to the dryers and press. Increasing TO combustion chamber temperature results in decreased VOC and CO emissions, but may increase NOx emissions. TO temperature will be monitored as a compliance parameter.

Visible emissions are the parameter most closely related to PM emissions from the TOs connected to the dryers. No visible emissions indicate that the control device is operating properly. Visible emissions from the dryer TOs stack will be monitored as a compliance parameter.

11) INDICATOR RANGES: PROVIDE THE RATIONALE AND JUSTIFICATION FOR THE SELECTION OF THE INDICATOR RANGES. THE RATIONALE AND JUSTIFICATION SHALL INDICATE HOW **EACH** INDICATOR RANGE WAS SELECTED BY EITHER A COMPLIANCE OR PERFORMANCE TEST, A TEST PLAN AND SCHEDULE, OR BY ENGINEERING ASSESSMENTS. DEPENDING ON WHICH METHOD IS BEING USED FOR EACH INDICATOR RANGE, INCLUDE THE SPECIFIC INFORMATION REQUIRED BELOW FOR THAT SPECIFIC INDICATOR RANGE. (IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL ACCORDINGLY WITH THE APPROPRIATE PSEU DESIGNATION AND POLLUTANT):

- COMPLIANCE OR PERFORMANCE TEST (INDICATOR RANGES DETERMINED FROM CONTROL DEVICE OPERATING PARAMETER DATA OBTAINED DURING A COMPLIANCE OR PERFORMANCE TEST CONDUCTED UNDER REGULATORY SPECIFIED CONDITIONS OR UNDER CONDITIONS REPRESENTATIVE OF MAXIMUM POTENTIAL EMISSIONS UNDER ANTICIPATED OPERATING CONDITIONS. SUCH DATA MAY BE SUPPLEMENTED BY ENGINEERING ASSESSMENTS AND MANUFACTURER'S RECOMMENDATIONS). THE RATIONALE AND JUSTIFICATION SHALL INCLUDE A SUMMARY OF THE COMPLIANCE OR PERFORMANCE TEST RESULTS THAT WAS USED TO DETERMINE THE INDICATOR RANGE AND DOCUMENTATION INDICATING THAT NO CHANGES HAVE TAKEN PLACE THAT COULD RESULT IN A SIGNIFICANT CHANGE IN THE CONTROL SYSTEM PERFORMANCE OR THE SELECTED INDICATOR RANGES SINCE THE COMPLIANCE OR PERFORMANCE TEST WAS CONDUCTED.

- TEST PLAN AND SCHEDULE (INDICATOR RANGES WILL BE DETERMINED FROM A PROPOSED IMPLEMENTATION PLAN AND SCHEDULE FOR INSTALLING, TESTING, AND PERFORMING ANY OTHER APPROPRIATE ACTIVITIES PRIOR TO USE OF THE MONITORING). THE RATIONALE AND JUSTIFICATION SHALL INCLUDE THE PROPOSED IMPLEMENTATION PLAN AND SCHEDULE THAT WILL PROVIDE FOR USE OF THE MONITORING AS EXPEDITIOUSLY AS PRACTICABLE AFTER APPROVAL OF THIS CAM PLAN, BUT IN NO CASE SHALL THE SCHEDULE FOR COMPLETING INSTALLATION AND BEGINNING OPERATION OF THE MONITORING EXCEED 180 DAYS AFTER APPROVAL.

- ENGINEERING ASSESSMENTS (INDICATOR RANGES OR THE PROCEDURES FOR ESTABLISHING INDICATOR RANGES ARE DETERMINED FROM ENGINEERING ASSESSMENTS AND OTHER DATA, SUCH AS MANUFACTURERS' DESIGN CRITERIA AND HISTORICAL MONITORING DATA, BECAUSE FACTORS SPECIFIC TO THE TYPE OF MONITORING, CONTROL DEVICE, OR PSEU MAKE COMPLIANCE OR PERFORMANCE TESTING UNNECESSARY). THE RATIONALE AND JUSTIFICATION SHALL INCLUDE DOCUMENTATION DEMONSTRATING THAT COMPLIANCE TESTING IS NOT REQUIRED TO ESTABLISH THE INDICATOR RANGE.

RATIONALE AND JUSTIFICATION:

Norbord Georgia is in the process of making significant modifications to the facility. This CAM plan is being submitted as part of a significant Title V permit modification with construction. After the new production line is complete, the facility will be required to conduct source testing upon achieving the maximum production rate at which the plant will operate. Parameter data will be recorded for the TO combustion chamber temperature (C201 and C202) and visible emissions (C201 only for visible emissions).

During testing the following steps will be performed:

For each TO, the following operating parameters will be recorded every 15 minutes or less: combustion chamber temperature for each TO. The operating mode of the TO, either burner mode or gas injection mode, will be recorded for every test run. Parameters will be recorded on TO Data Sheets. At the same time, process parameters including wood species (% hardwood and % softwood), production rate and number of operating dryers will also be recorded.

To verify capture efficiency for press enclosures Norbord will follow the PCWP MACT, Subpart DDDD procedures for determining capture efficiency of Wood Products Enclosure.

APPENDIX B

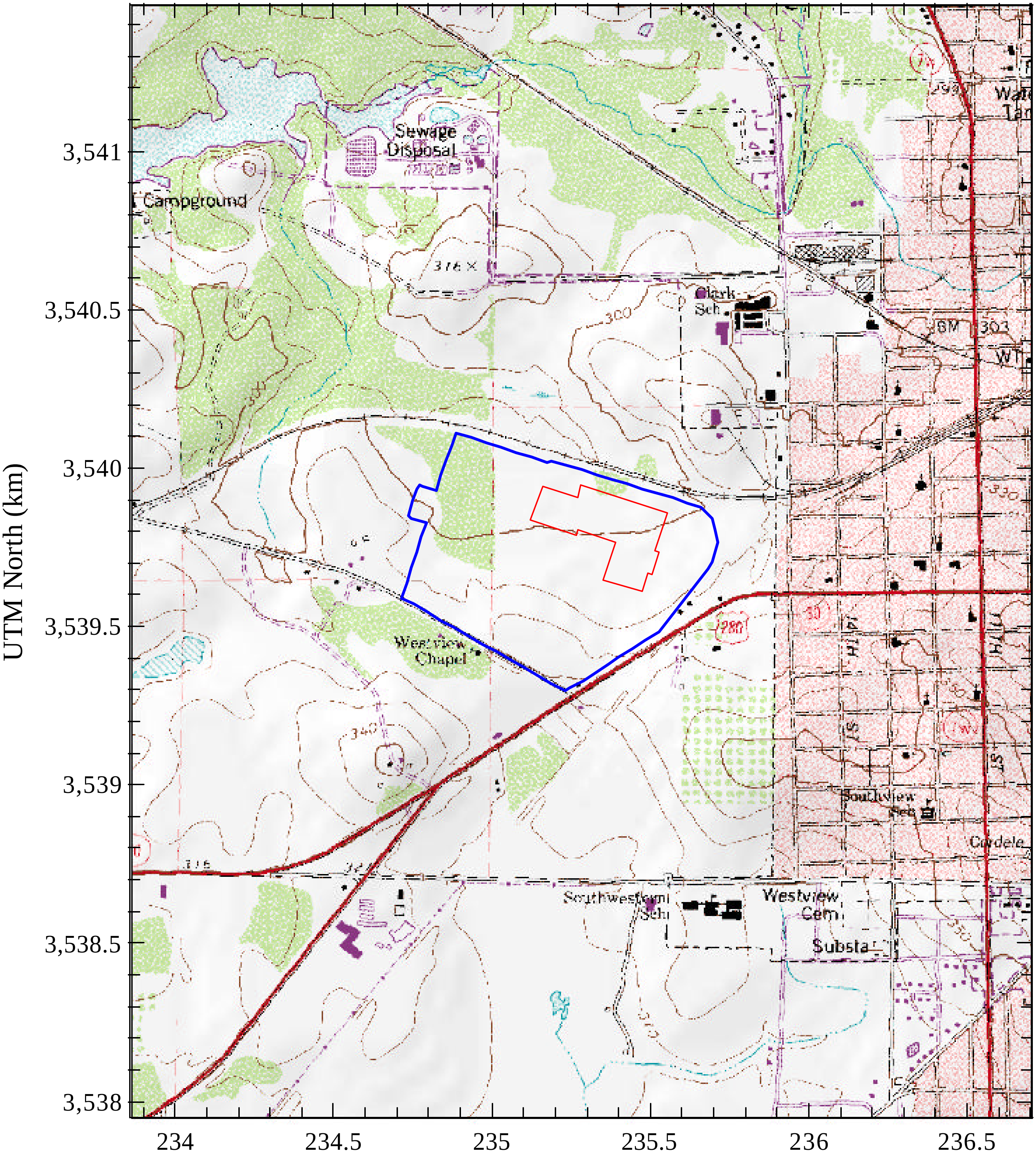
AREA MAP

FACILITY PLOT PLAN

PROCESS FLOW DIAGRAMS

CURRENT TITLE V PERMIT

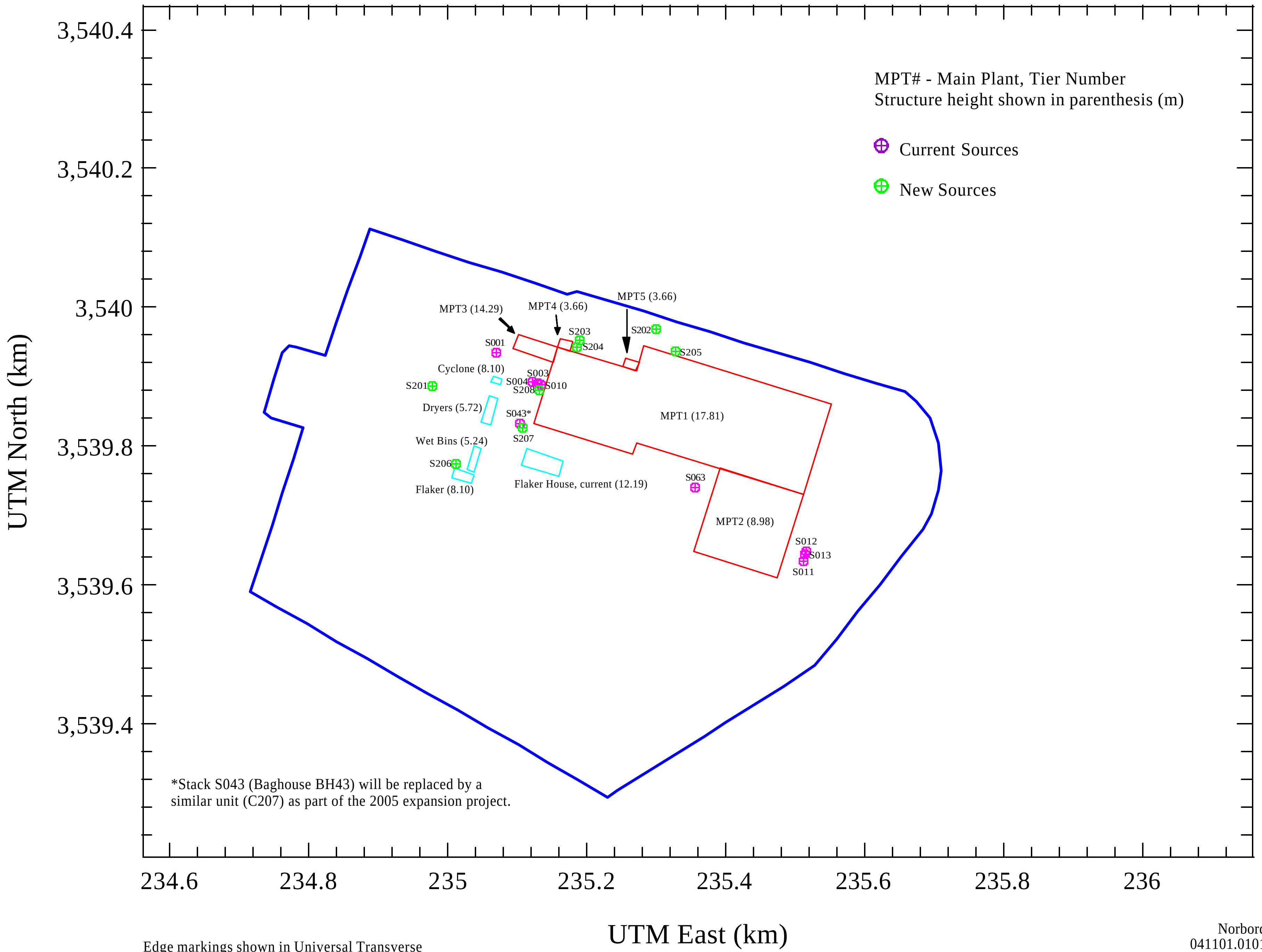
Figure B-1. Regional Area Map
Norbord - Cordele, Georgia



Edge markings shown in Universal Transverse Mercator Coordinates, Zone 17, NAD27

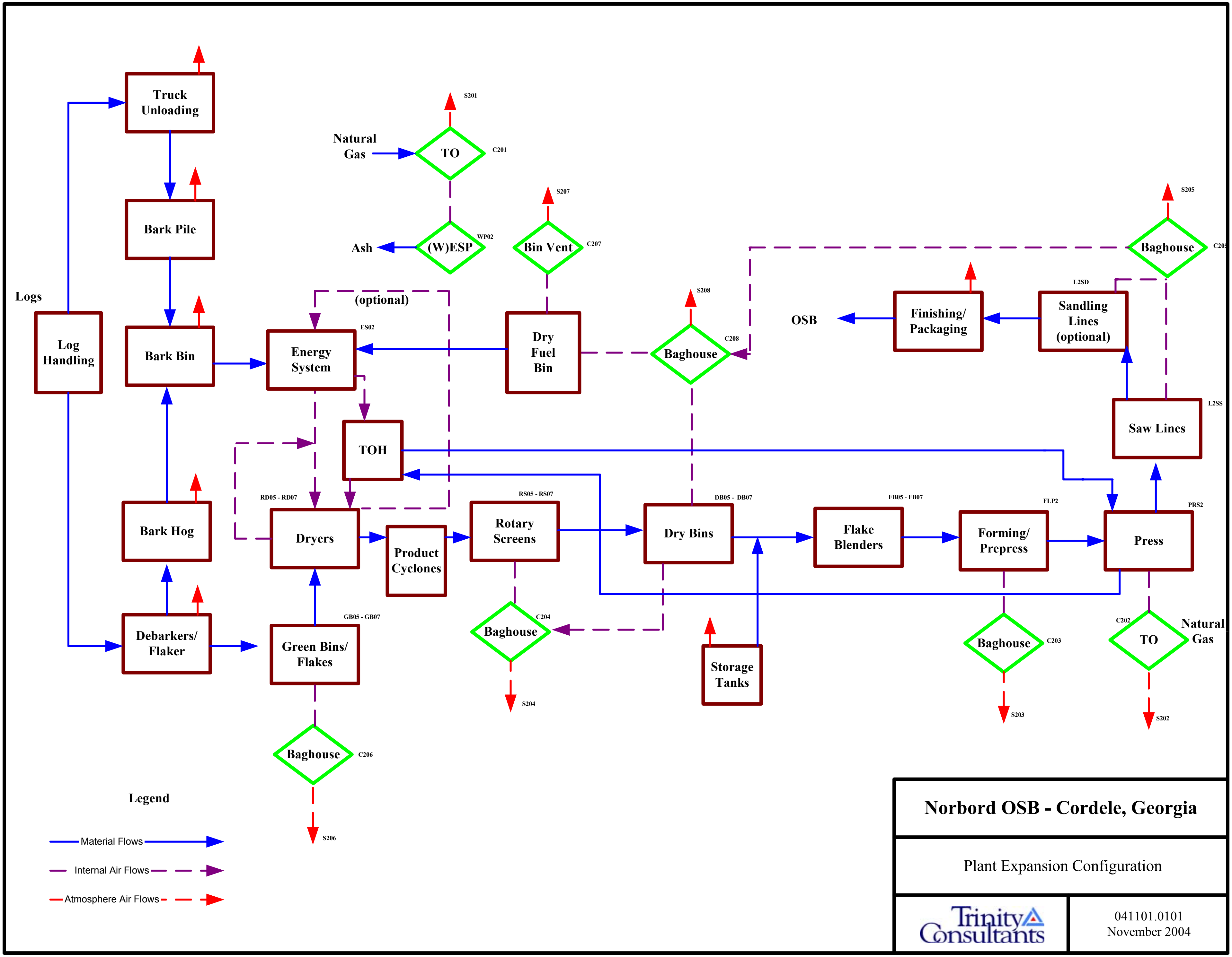
Norbord
041101.0101
Figure B-1 Regional Area Map.srf

Figure B-2. Locations and Heights of Stacks and Structures
Norbord - Cordele, Georgia



Edge markings shown in Universal Transverse Mercator Coordinates, Zone 17, NAD27

Norbord
041101.0101
Figure B-2 Plot Plan.srf



Norbord OSB - Cordele, Georgia

Plant Expansion Configuration

Trinity Consultants

041101.0101
November 2004

Part 70 Operating Permit

Permit Number: **2493-081-0054-V-02-0** **Effective Date:** **June 25, 2002**

Facility Name: **Norbord Georgia, Inc.**
964 Highway 280 West
Cordele, Crisp County, Georgia 31015

Mailing Address: 964 Highway 280 West
Cordele, Georgia 31015

Parent/Holding Company: Norbord Georgia, Inc.

Facility AIRS Number: 04-13-081-00054

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Georgia Rules for Air Quality Control, Chapter 391-3-1, adopted pursuant to and in effect under the Act, the Permittee described above is issued a Part 70 Permit for:

the operation of a facility that manufactures oriented strand board.

This Permit is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq, the Rules, Chapter 391-3-1, adopted and in effect under that Act, or any other condition of this Permit. Unless modified or revoked, this Permit expires five years after the effective date indicated above.

This Permit may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in Title V Application No. TV-9086 which was determined to be complete on December 26, 1996; any other applications upon which this Permit is based; supporting data entered therein or attached thereto; or any subsequent submittal or supporting data; or for any alterations affecting the emissions from this source.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **32** pages, which pages are a part of this Permit.

Director
Environmental Protection Division

Table of Contents

PART 1.0 FACILITY DESCRIPTION

1.1 Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

1.2 Previous and/or Other Names

Previous names identified are as follows: Masonite-Cordele and International Paper Company.

1.3 Overall Facility Process Description

Trees (typically southern yellow pine) are received by truck, cut to length, debarked, flaked, stored in four green metering bins, and dried in one of four wood flake rotary dryers. The dry flakes are collected in the primary cyclones, fed to four rotary screens for fines removal, and conveyed to the core and/or surface dry storage bins. The flakes are metered from the dry bins and mixed with wax and resin in the core and/or surface rotary blenders. Orienting heads align the flakes into a continuous mat on the forming line. The mat is cut into sections, pressed several minutes at elevated temperature and pressure in a board press, trimmed to size, graded, sanded as required, edge coated, and packaged. The OSB boards may also have a tongue and groove added as desired.

Emissions from the board press are controlled by a regenerative thermal oxidizer. Emissions from the mat forming and trimming operations are controlled by baghouses.

Energy for the wood flake dryers and thermal oil system for press heat is supplied by the Wellons fixed grate wood burner, which is rated at 210 MMBtu/hr input. The Wellons exhaust gas passes through the rotary dryers, mentioned above, which exhaust through a wet electrostatic precipitator. The Wellons also includes a natural gas fired burner.

PART 2.0 REQUIREMENTS PERTAINING TO THE ENTIRE FACILITY

2.1 Emission Limits

None applicable.

2.2 Facility Wide Federal Rule Standards

None applicable.

2.3 Facility Wide SIP Rule Standards

None applicable.

2.4 Facility Wide Standards Not Covered by a Federal or SIP Rule and Not Instituted as an Emission Cap or Operating Limit

None applicable.

PART 3.0 REQUIREMENTS FOR EMISSION UNITS

Note: Except where an applicable requirement specifically states otherwise, the averaging times of any of the Emissions Limitations or Standards included in this permit are tied to or based on the run time(s) specified for the applicable reference test method(s) or procedures required for demonstrating compliance.

3.1 Emission Units

Emission Units			Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Process Group	Applicable Requirements/ Standards	Corresponding Permit Conditions	ID No.	Description
WELL	Wellons Fixed Grate Wood Burner	NA	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 5.2.1, 5.2.3, 5.2.4, 5.2.5	WP01	Wet Electrostatic Precipitator
GB01	Green Bin #1	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 5.2.1, 5.2.3, 5.2.4, 5.2.5	WP01	Wet Electrostatic Precipitator
GB02	Green Bin #2	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.7, 5.2.1, 5.2.3, 5.2.4, 5.2.5	WP01	Wet Electrostatic Precipitator
GB03	Green Bin #3	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.8, 5.2.1, 5.2.3, 5.2.4, 5.2.5	WP01	Wet Electrostatic Precipitator
GB04	Green Bin #4	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.9, 5.2.1, 5.2.3, 5.2.4, 5.2.5	WP01	Wet Electrostatic Precipitator
RD01	Wood Flake Rotary Dryer #1	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 5.2.1, 5.2.3, 5.2.4, 5.2.5, 6.2.1	WP01	Wet Electrostatic Precipitator
RD02	Wood Flake Rotary Dryer #2	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.7, 5.2.1, 5.2.3, 5.2.4, 5.2.5, 6.2.1	WP01	Wet Electrostatic Precipitator
RD03	Wood Flake Rotary Dryer #3	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.8, 5.2.1, 5.2.3, 5.2.4, 5.2.5, 6.2.1	WP01	Wet Electrostatic Precipitator
RD04	Wood Flake Rotary Dryer #4	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.9, 5.2.1, 5.2.3, 5.2.4, 5.2.5, 6.2.1	WP01	Wet Electrostatic Precipitator
RS01	Rotary Screen #1	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.3, 3.3.1, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH04	System #2 Baghouse
RS02	Rotary Screen #2	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse
RS03	Rotary Screen #3	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse
RS04	Rotary Screen #4	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse

Emission Units			Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Process Group	Applicable Requirements/ Standards	Corresponding Permit Conditions	ID No.	Description
DB01	Dry Bin #1	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse
DB02	Dry Bin #2	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse
DB03	Dry Bin #3	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse
DB04	Dry Bin #4	NA	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See RS01	BH04	System #2 Baghouse
FB01	Flake Blender #1	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.3, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH04	System #2 Baghouse
FB02	Flake Blender #2	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See FB01	BH04	System #2 Baghouse
FB03	Flake Blender #3	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See FB01	BH04	System #2 Baghouse
FB04	Flake Blender #4	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	See FB01	BH04	System #2 Baghouse
FLPP	Forming Line & Prepress	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.2, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH03	System #1 Baghouse
PRES	Board Press/Unloader	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.8, 3.2.9, 3.2.10, 3.2.11, 3.3.1, 3.3.10, 3.3.11, 3.3.12, 3.4.2, 4.2.1, 5.2.1, 5.2.2	RT63	Regenerative Thermal Oxidizer
GLSS	Globe Saw System	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.6, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH13	Globe Saw System Baghouse
TGSS	Tongue and Groove Sander System	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.4, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH11	Sander System Baghouse
TGSL	Tongue and Groove Saw Line	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.5, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH12	T &G Line System Baghouse
DFSS	Dry Fuel System	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.1, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH43	Dry Fuel Baghouse
HPWS	High Pressure Waste System	PG01	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 52.21	3.2.7, 3.3.1, 3.4.2, 5.2.6, 5.2.7, 5.2.8, 5.2.9	BH10	HP Waste System Baghouse
V016	Resin Storage Tank	NA	40 CFR 60 Subpart Kb	6.2.2	None	NA
V017	Resin Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA
V018	Resin Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA
V019	Resin Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA

Emission Units			Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Process Group	Applicable Requirements/ Standards	Corresponding Permit Conditions	ID No.	Description
V020	Resin Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA
V021	Resin Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA
V022	Wax Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA
V023	Wax Storage Tank	NA	40 CFR 60 Subpart Kb	See V016	None	NA

* Generally applicable requirements contained in this permit may also apply to emission units listed above.

3.2 Equipment Emission Caps and Operating Limits

Baghouses

3.2.1 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Dry Fuel System (Source Code DFSS), particulate matter emissions in excess of 1.59 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

3.2.2 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Forming Line and Prepress (Source Code FLPP), particulate matter emissions in excess of 0.04 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

3.2.3 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Rotary Screens (Source Codes RS01, RS02, RS03, and RS04); Dry Bins (Source Codes DB01, DB02, DB03, and DB04); and Flake Blenders (Source Code FB01, FB02, FB03, and FB04), on a combined basis, which comprise all emissions sources venting through the System #2 Baghouse (Source Code BH04), particulate matter emissions in excess of 0.1 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

3.2.4 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Tongue and Groove Sander System (Source Code TGSS), particulate matter emissions in excess of 0.43 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

3.2.5 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Tongue and Groove Saw Line (Source Code TGSL), particulate matter emissions in excess of 0.18 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

3.2.6 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Globe Saw System (GLSS), particulate matter emissions in excess of 0.53 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

3.2.7 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the High Pressure Waste System (Source Code HPWS), particulate matter emissions in excess of 1.14 pounds per hour. [391-3-1-.03(2)(c) and 391-3-1-.02(2)(e) (subsumed)]

Board Press BP01 - Formaldehyde

3.2.8 The Permittee shall not discharge, or cause the discharge, into the atmosphere from Board Press/Unloader with source code PRES, any gases which contain Formaldehyde in excess of 0.35 pounds per hour. [Georgia Air Toxics Guideline]

3.2.9 The Permittee shall not discharge, or cause the discharge, into the atmosphere from Board Press/Unloader (Source Code PRES) any gases which contain Formaldehyde in excess of 1.6 tons during any twelve consecutive months. [Georgia Air Toxics Guideline]

3.2.10 The Formaldehyde destruction efficiency of the Regenerative Thermal Oxidizer with source code RT63 shall be at least 95 percent during the operation of the Board Press/Unloader (Source Code PRES) for its intended purpose. [Georgia Air Toxics Guideline]

Regenerative Thermal Oxidizer

3.2.11 The combustion temperature of the oxidizer retention chamber in the Regenerative Thermal Oxidizer with source code RT63 shall be at least 1500 deg F (or the value determined in accordance with Condition 4.2.1 of this Permit and approved by the Division) while the RTO is receiving emissions from the Board Press/Unloader with source code PRES. [391-3-1-.03(2)(c)]

3.3 Equipment Federal Rule Standards

3.3.1 The Permittee shall not discharge, or cause the discharge, into the atmosphere from from the Green Bins (Source Codes GB01, GB02, GB03, and GB04); the Wellons (Source Code WELL); the Wood Flake Dryers (Source Codes RD01, RD02, RD03, and RD04); the Rotary Screens (Source Codes RS01, RS02, RS03, and RS04); the Dry Bins (Source Codes DB01, DB02, DB03, and DB04); the Flake Blenders (Source Code FB01, FB02, FB03, and FB04); the Forming Line and Prepress (Source Code FLPP); the Board Press/Unloader (Source Code PRES), the Globe Saw System (Source Code GLSS); the Tongue and Groove Sander System (Source Code TGSS); the Tongue and Groove Saw Line (Source Code TGSL); the High Pressure Waste System (Source Code HPWS); and the Dry Fuel System (Source Code DFSS), each, gases which exhibit opacity in excess of twenty (20) percent.
[40 CFR 52.21(j) and 391-3-1-.02(2)(b) (subsumed)]

Wellons and Wood Flake Dryers

3.3.2 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from the Green Bins (Source Codes GB01, GB02, GB03, and GB04); the Wellons (Source Code WELL); and the Wood Flake Dryers (Source Codes RD01, RD02, RD03, and RD04), combined, gases which contain Particulate Matter in excess of seventy (70) pounds per hour. [40 CFR 52.21(j)]

3.3.3 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from the Green Bins (Source Codes GB01, GB02, GB03, and GB04); the Wellons (Source Code WELL); and the Wood Flake Dryers (Source Codes RD01, RD02, RD03, and RD04), combined, which comprise all emission sources venting through the wet electrostatic precipitator (Source Code WP01), any gases which contain Nitrogen Oxides in excess of 30 pounds per hour. [40 CFR 52.21(j)]

3.3.4 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from the Green Bins (Source Codes GB01, GB02, GB03, and GB04); the Wellons (Source Code WELL); and the Wood Flake Dryers (Source Codes RD01, RD02, RD03, and RD04), combined, any gases which contain Carbon Monoxide in excess of 130 pounds per hour. [40 CFR 52.21(j)]

3.3.5 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from the Green Bins (Source Codes GB01, GB02, GB03, and GB04); the Wellons (Source Code WELL); and the Wood Flake Dryers (Source Codes RD01, RD02, RD03, and RD04), combined, any gases which contain Volatile Organic Compounds in excess of 320 pounds per hour. [40 CFR 52.21(j)]

3.3.6 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from green bin number 1 (Source Code GB01) and wood flake dryer number 1 (Source Code RD01), on a combined basis, any gases which contain particulate matter in excess of the rate derived by the following equation:
[40 CFR 52.21 (j) and 391-3-1-.02(2)(e)]

a. For process input weight rate up to and including 30 tons per hour:
$E = 4.1P^{0.67}$

b. For process input weight rate greater than 30 tons per hour:
$E = 55P^{0.11} - 40$

where E equals the allowable particulate matter emission rate in pounds per hour and P equals the dry process input weight rate in tons per hour.

3.3.7 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from green bin number 2 (Source Code GB02) and wood flake dryer number 2 (Source Code RD02), on a combined basis, any gases which contain particulate matter in excess of the rate derived by the following equation:
[40 CFR 52.21 (j) and 391-3-1-.02(2)(e)]

a. For process input weight rate up to and including 30 tons per hour:
$E = 4.1P^{0.67}$

b. For process input weight rate greater than 30 tons per hour:
$E = 55P^{0.11} - 40$

where E equals the allowable particulate matter emission rate in pounds per hour and P equals the dry process input weight rate in tons per hour.

3.3.8 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from green bin number 3 (Source Code GB03) and wood flake dryer number 3 (Source Code RD03), on a combined basis, any gases which contain particulate matter in excess of the rate derived by the following equation:
[40 CFR 52.21 (j) and 391-3-1-.02(2)(e)]

a. For process input weight rate up to and including 30 tons per hour:
$E = 4.1P^{0.67}$

b. For process input weight rate greater than 30 tons per hour:
$E = 55P^{0.11} - 40$

where E equals the allowable particulate matter emission rate in pounds per hour and P equals the dry process input weight rate in tons per hour.

3.3.9 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from green bin number 4 (Source Code GB04) and wood flake dryer number 4 (Source Code RD04), on a combined basis, any gases which contain particulate matter in excess of the rate derived by the following equation:
[40 CFR 52.21 (j) and 391-3-1-.02(2)(e)]

a. For process input weight rate up to and including 30 tons per hour:
$E = 4.1P^{0.67}$

b. For process input weight rate greater than 30 tons per hour:
$E = 55P^{0.11} - 40$

where E equals the allowable particulate matter emission rate in pounds per hour and P equals the dry process input weight rate in tons per hour.

Original Board Press

3.3.10 The Permittee shall not discharge, or cause the discharge, into the atmosphere from the Board Press/Unloader (Source Code PRES), any gases which contain volatile organic compounds in excess of 10 tons during any twelve consecutive months. [40 CFR 52.21(j)]

3.3.11 The VOC destruction efficiency of the Regenerative Thermal Oxidizer with source code RT63 shall be at least 95 percent. [40 CFR 52.21(j)]

3.3.12 The Permittee shall route the exhaust of the Board Press/Unloader (Source Code PRES) to the Regenerative Thermal Oxidizer (Source Code RT63) during all periods of its operation.
[Avoidance of PSD – 40 CFR 52.21]

3.4 Equipment SIP Rule Standards

3.4.1 The Permittee shall not fire any fuel in the Wellons (Source Code WELL) whose sulfur content exceeds 2.5 weight percent sulfur. [391-3-1-.02(2)(g)]

3.4.2 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from Process Group PG01, any gases which contain particulate matter in excess of the rate derived by the following equation: [391-3-1-.02(2)(e)]

a. For process input weight rate up to and including 30 tons per hour:
$E = 4.1P^{0.67}$

where E equals the allowable particulate matter emission rate in pounds per hour and P equals the dry process input weight rate for the Process Group.

3.5 Equipment Standards Not Covered by a Federal or SIP Rule and Not Instituted as an Emission Cap or Operating Limit

Not Applicable

PART 4.0 REQUIREMENTS FOR TESTING

4.1 General Testing Requirements

4.1.1 The Permittee shall cause to be conducted a performance test at any specified emission point when so directed by the Environmental Protection Division ("Division"). The test results shall be submitted to the Division within 30 days of the completion of the testing. Any tests shall be performed and conducted using methods and procedures that have been previously specified or approved by the Division.
[391-3-1-.02(6)(b)1(i)]

4.1.2 The Permittee shall provide the Division thirty (30) days prior written notice of the date of any performance test(s) to afford the Division the opportunity to witness and/or audit the test, and shall provide with the notification a test plan in accordance with Division guidelines.
[391-3-1-.02(3)(a)]

4.1.3 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants. The methods for the determination of compliance with emission limits listed under Sections 3.2, 3.3, 3.4 and 3.5 which pertain to the emission units listed in Section 3.1 are as follows:

a. Method 1 shall be used for selection of sampling site and number of traverse points.

b. Method 2 shall be used for stack gas flow rate.

c. Method 3 shall be used for gas molecular weight.

d. Method 4 shall be used for moisture determination.

e. Method 5 shall be used for the determination of particulate matter concentration for sources other than the wood flake dryers (Source Codes RD01, RD02, RD03, and RD04) and the board presses with source codes BP01 and BP02.

f. Method 5T shall be used for the determination of the particulate matter concentration for the wood flake dryers (Source Codes RD01, RD02, RD03, and RD04) and the board presses (Source Code PRESS and PR01).

g. Method 7 or 7E shall be used for the determination of nitrogen oxides. The sampling time for each run using Method 7E shall be one hour.

h. Method 9 and the procedures of Section 1.3 of the above referenced document shall be used for the determination of opacity.

i. Method 10 shall be used for the concentration of carbon monoxide. The sampling time for each run shall be one hour.

j. Method 19 shall be used, when applicable, to convert particulate matter, carbon monoxide, and nitrogen oxides concentrations (i.e. grains/dscf for PM, ppm for gaseous pollutants), as determined using other methods specified in this section, to emission rates (i.e., lb/MMBtu).

k. Method 25 shall be used for the measurement of volatile organic compounds as total gaseous nonmethane organics as carbon. Method 25A may be used for this purpose at the discretion of the Director provided that the sample line, in-line filter (if used), and detector are sufficiently heated to avoid any condensation of VOC. When determining the emission rate from the board press (Source Code PRES), the emission rate of formaldehyde shall be added to the emission rate as determined using Method 25A. The Permittee shall convert the Method 25 or Method 25A measurements using a conversion factor, acceptable to the Division. The sampling time for each run shall be one hour.

l. ASTM Test Method D129, D1552, D2622 or D4294 shall be used for the determination of fuel sulfur content.

m. Method 0011 from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846 shall be used for the determination of formaldehyde concentrations. The sampling time for each run shall be one hour. EPA Method 0011 (sampling) and EPA Method 0011A (analysis) can be used for the determination of formaldehyde concentrations. [40 CFR 266, Appendix IX] Alternatively, NCASI Method CI/WP-98.01 can equally be used for the determination of formaldehyde concentrations. The sampling time for each run shall be at least one hour.

Minor changes in methodology may be specified or approved by the Director or his designee when necessitated by process variables, changes in facility design, or improvement or corrections that, in his opinion, render those methods or procedures, or portions thereof, more reliable.
[391-3-1-.02(3)(a)]

4.2 Specific Testing Requirements

4.2.1 The Permittee shall meet the requirements of the steps noted below in order to establish a new minimum oxidizer retention chamber temperature in the regenerative thermal oxidizer with source code RT63 which provides for compliance with Condition Nos. 3.2.10 and 3.3.11: [391-3-1-.03(2)(c)]

a. The Permittee shall conduct a performance test to determine the destruction efficiency of the Regenerative Thermal Oxidizer (RTO, Source Code RT63) for volatile organic compounds. During the performance test for the RTO, the RTO shall be operated with the retention chamber temperature at 1350 degrees F or greater.

b. The Permittee shall conduct a performance test to determine the destruction efficiency of the Regenerative Thermal Oxidizer (RTO, Source Code RT63) for formaldehyde. During the performance test for the RTO, the RTO shall be operated with the retention chamber temperature at 1350 degrees F or greater.

c. The Permittee shall comply with the requirements of Condition Nos. 4.1.1, 4.1.2, and 4.1.3 as they relate to this condition.

d. During the performance tests specified in paragraphs a and b above, the Permittee shall measure and record the oxidizer retention chamber temperature at least once per ten minutes and shall determine the average oxidizer retention chamber temperature from the recorded values. The Permittee shall submit, with the performance test report, the average oxidizer retention chamber temperature and the oxidizer retention chamber temperature data recorded during the performance test.

PART 5.0 REQUIREMENTS FOR MONITORING (Related to Data Collection)

5.1 General Monitoring Requirements

5.1.1 Any continuous monitoring system required by the Division and installed by the Permittee shall be in continuous operation and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data shall be recorded during calibration checks and zero and span adjustments. Maintenance or repair shall be conducted in the most expedient manner to minimize the period during which the system is out of service.
[391-3-1-.02(6)(b)1]

5.2 Specific Monitoring Requirements

5.2.1 The Permittee shall install, calibrate, maintain, and operate a system to continuously monitor and record the indicated parameters on the following equipment. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

a. The combustion zone temperature of the oxidizer retention chamber of Regenerative Thermal Oxidizer with Source Code RT63. Data shall be recorded continuously.

b. The gas stream pressure at the inlet of, or the pressure drop across, Regenerative Thermal Oxidizer with Source Code RT63. Data shall be recorded continuously. The Permittee shall implement this condition within 180 days of Permit issuance.

c. Secondary voltage for each field of the Wet Electrostatic Precipitator (Source Code WP01). Data shall be recorded continuously.

d. Temperature of the gas stream at the outlet of the quench chamber of the Wet Electrostatic Precipitator (Source Code WP01). Data shall be recorded continuously.

e. Water flow rate at the mist flow pump of the Wet Electrostatic Precipitator (Source Code WP01). Data shall be recorded continuously.

5.2.2 Within 180 days of the date of issuance of this Permit, the Permittee shall establish the inlet gas stream pressure range (or alternatively the pressure drop range) that is representative of good operation of the Regenerative Thermal Oxidizer (RTO, Source Code RT63) using data from the applicable monitoring device required by Condition 5.2.1.b. The Permittee shall submit, for acceptance by the Division, a report containing a statement indicating the method of monitoring chosen to meet the requirements of Condition 5.2.1.b, the inlet gas stream pressure data (or alternatively the pressure drop data), the inlet gas stream pressure range (or alternatively the pressure drop range) which has been established as representative of good operation of the RTO, and a description of the procedures used to establish the said range.
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

5.2.3 Within 180 days after the date of issuance of this Permit, the Permittee shall establish the secondary voltage range representative of good operation of the Wet Electrostatic Precipitator (WESP, Source Code WP01) using data from the applicable monitoring device required by Condition 5.2.1.c. The Permittee shall submit, for acceptance by the Division, a report containing the secondary voltage data, the secondary voltage range which has been established as representative of good operation of the WESP, and a description of the procedures used to establish the secondary voltage range.
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

5.2.4 Within 180 days after the date of issuance of this Permit, the Permittee shall establish the temperature range of the gas stream at the outlet of the quench chamber representative of good operation of the Wet Electrostatic Precipitator (WESP, Source Code WP01) using data from the applicable monitoring device required by Condition 5.2.1.d. The Permittee shall submit, for acceptance by the Division, a report containing the temperature data, the temperature range which has been established as representative of good operation of the WESP, and a description of the procedures used to establish the temperature range.
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

5.2.5 Within 180 days after the date of issuance of this Permit, the Permittee shall establish the water flow rate range at the mist flow pump for representative operation of the Wet Electrostatic Precipitator (WESP, Source Code WP01) using data from the applicable monitoring device required by Condition 5.2.1.e. The Permittee shall submit, for acceptance by the Division, a report containing the water flow rate data, the water flow rate range which has been established as representative of the WESPs operation, and a description of the procedures used to establish the water flow rate range. [391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

5.2.6 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the following equipment. Data shall be recorded at the frequency specified below. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

a. Pressure drop indicators on baghouses BH03, BH04, BH10, BH11, BH12, BH13, and BH43. Data shall be recorded at least once per week.

5.2.7 The Permittee shall perform checks to determine if visible emissions are present from baghouses BH03, BH04, BH10, BH11, BH12, BH13, and BH43. The check shall be conducted at least once for each day or portion of each day of operation and shall be conducted using the following procedure: [391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

a. The person performing the determination shall stand at a distance of at least 15 feet with is sufficient to provide a clear view of the plume against a contrasting background with the sun in the 140 degree sector at his/her back. Consistent with this requirement, the determination shall be made from a position such that the line of vision is approximately perpendicular to the plume director. Only one plume shall be in the line of sight at any time when multiple stacks are in proximity to each other.

5.2.8 For each baghouse specified in Condition 5.2.7 determined to be emitting visible emissions, the Permittee shall determine the cause of the excursion and correct the problem in the most expedient manner possible. In the maintenance log, the Permittee shall note the cause of the excursion, pressure drop, and other pertinent operating parameters, and the corrective action taken.
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

5.2.9 Within 60 days of the issuance of this Permit, the Permittee shall develop and implement a Preventative Maintenance Program for the baghouses specified in Condition 5.2.7 to assure that the provisions of Condition 8.17.1 are met. The program shall be subject to review and modification by the Division and shall include the pressure drop ranges that indicate proper operation for each baghouse. At a minimum, the following operation and maintenance checks shall be made on at least a weekly basis, and a record of the findings and corrective actions taken shall be kept in a maintenance log: [391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

a. Record the pressure drop across each baghouse and ensure that it is within the appropriate range.

b. For baghouses equipped with compressed air cleaning systems, check the system for proper operation. This may include checking for low pressure, leaks, proper lubrication, and proper operation of timer and valves.

c. For baghouses equipped with reverse air cleaning systems, check the system for proper operation. This may include checking damper, bypass, and isolation valves for proper operation.

d. Check dust collector hoppers and conveying systems for proper operation.

5.3 Record Keeping and Reporting Requirements (associated with Specific Monitoring Requirements)

5.3.1 The Permittee shall, in accordance with the requirements of Condition Nos. 6.1.1 and 6.1.6 of the Permit, maintain records of all data and information required by Condition Nos. 5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8, and 5.2.9. Reports shall be submitted in accordance with the requirements of Condition 6.1.4 of this Permit. [391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

PART 6.0 OTHER RECORD KEEPING AND REPORTING REQUIREMENTS

6.1 General Record Keeping and Reporting Requirements

6.1.1 Unless otherwise specified, all records required to be maintained by this Permit shall be recorded in a permanent form suitable for inspection and submission to the Division and to the EPA. The records shall be retained for at least five (5) years following the date of entry.
[391-3-1-.02(6)(b)1(i) and 40 CFR 70.6(a)(3)]

6.1.2 In addition to any other reporting requirements of this Permit, the Permittee shall report to the Division in writing, within seven (7) days, any deviations from applicable requirements associated with any malfunction or breakdown of process, fuel burning, or emissions control equipment for a period of four hours or more which results in excessive emissions.

The Permittee shall submit a written report that shall contain the probable cause of the deviation(s), duration of the deviation(s), and any corrective actions or preventive measures taken.
[391-3-1-.02(6)(b)1(iv), 391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(3)(iii)(B)]

6.1.3 The Permittee shall submit written reports of any failure to meet an applicable emission limitation or standard contained in this permit and/or any failure to comply with or complete a work practice standard or requirement contained in this permit which are not otherwise reported in accordance with conditions 6.1.4 or 6.1.2. Such failures shall be determined through observation, data from any monitoring protocol, or by any other monitoring which is required by this permit. The reports shall cover each semiannual period ending June 30 and December 31 of each year, shall be postmarked by the 30th day following the end of each reporting period, July 30 and January 30, respectively, and shall contain the probable cause of the failure(s), duration of the failure(s), and any corrective actions or preventive measures taken.
[391-3-1-.03(10)(d)1.(i) and 40 CFR 70.6(a)(3)(iii)(B)]

6.1.4 The Permittee shall submit a written report containing any excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each semiannual period ending June 30 and December 31 of each year. All reports shall be postmarked by the 30th day following the end of each reporting period, July 30 and January 30, respectively. In the event that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's Procedures for Testing and Monitoring Sources of Air Pollutants and shall contain the following:
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(iii)(A)]

a. A summary report of excess emissions, exceedances and excursions, and monitor downtime, in accordance with Section 1.5(c) and (d) of the above referenced document, including any failure to follow required work practice procedures.

b. Total process operating time during each reporting period.

c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of occurrence.

d. Specific identification of each period of such excess emissions, exceedances, and excursions that occur during startups, shutdowns, or malfunctions of the affected facility. Include the nature and cause of any malfunction (if known), the corrective action taken or preventive measures adopted.

e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

f. Certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

6.1.5 Where applicable, the Permittee shall keep the following records:
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(3)(ii)(A)]

a. The date, place, and time of sampling or measurement;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of such analyses; and

f. The operating conditions as existing at the time of sampling or measurement.

6.1.6 The Permittee shall maintain files of all measurements, including continuous monitoring systems, monitoring devices, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices. These files shall be kept in a permanent form suitable for inspection and shall be maintained for a period of at least five (5) years following the date of such measurements, reports, maintenance and records.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6 (a)(3)(ii)(B)]

6.1.7 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition 6.1.4, the following excess emissions, exceedances, and excursions shall be reported:
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

a. Excess emissions: (means for the purpose of this Condition and Condition 6.1.4, any condition that is detected by monitoring or record keeping which is specifically defined, or stated to be, excess emissions by an applicable requirement)

i. None required to be reported in accordance with Condition 6.1.4.

b. Exceedances: (means for the purpose of this Condition and Condition 6.1.4, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)

i. None required to be reported in accordance with Condition 6.1.4.

c. Excursions: (means for the purpose of this Condition and Condition 6.1.4, any departure from an indicator range or value established for monitoring consistent with any averaging period specified for averaging the results of the monitoring)

i. Any daily average hourly wet process input weight rate to the wood flake dryers (Source Codes RD01, RD02, RD03, and RD04), on a combined basis, which exceeds 80 tons or an alternative value approved by the Division.

ii. Any eight-hour period during which the average oxidizer retention chamber temperature drops below 1500 deg F for regenerative thermal oxidizer with source codes RT63. For purposes of this condition, each clock hour begins a new eight-hour period and the Permittee does not need to account for any time period when the applicable process equipment is not in operation. The requirements of this paragraph do not apply after such time that the Permittee determines a new oxidizer retention chamber temperature by carrying out testing specified by Condition 4.2.1 to comply with Condition 3.2.11.

iii. Any eight-hour period during which the average oxidizer retention chamber temperature for regenerative thermal oxidizer with source codes RT63 is 50 degrees F below the average oxidizer retention chamber temperature derived by following the requirements in Condition 4.2.1 and approved as part of Condition 3.2.11. For purposes of this condition, each clock hour begins a new eight-hour period and the Permittee does not need to account for any time period when the applicable process equipment is not in operation. This Permit Condition only applies after such time the Permittee determines a new oxidizer retention chamber temperature by carrying out testing specified by Condition 4.2.1 to comply with Condition 3.2.11.

iv. Any twelve-hour average gas stream pressure in the duct plenum at the inlet of the regenerative thermal oxidizer (RTO, Source Code RT63) that is outside of the range established in Condition 5.2.2. For the purpose of this condition, each clock hour begins a new twelve-hour period and the Permittee does not need to account for any time period when the applicable process equipment is not in operation. This Permit Condition becomes effective 180 days after the date of Permit issuance if the Permittee elects to monitor this parameter in lieu of monitoring the pressure drop across said RTO.

v. Any twelve-hour average pressure drop across the regenerative thermal oxidizer (RTO, Source Code RT63) that is outside of the range established in Condition 5.2.2. For the purpose of this condition, each clock hour begins a new twelve-hour period and the Permittee does not need to account for the time period when the applicable process equipment is not in operation. This Permit Condition becomes effective 180 days after the date of Permit issuance if the Permittee elects to monitor this parameter in lieu of monitoring the pressure at the inlet plenum of said RTO.

vi. Any three-hour average secondary voltage on the wet electrostatic precipitator (WESP, Source Code WP01) that is outside of the range established in Condition 5.2.3. For the purpose of this condition, each clock hour begins a new three-hour period and the Permittee does not need to account for any time period when the applicable process equipment is not in operation. This Permit Condition becomes effective 180 days after the date of Permit issuance.

vii. Any three-hour average quench chamber outlet temperature on the wet electrostatic precipitator (WESP, Source Code WP01) that is outside of the range established in Condition 5.2.4. For the purpose of this condition, each clock hour begins a new three-hour period and the Permittee does not need to account for the time period when the applicable process equipment is not in operation. This Permit Condition becomes effective 180 days after the date of Permit issuance.

viii. Any three-hour average water flow rate at the mist flow pump on the wet electrostatic precipitator (WESP, Source Code WP01) that is outside of the range established in Condition 5.2.5. For the purpose of this condition, each clock hour begins a new three-hour period and the Permittee does not need to account for any time period when the applicable process equipment is not in operation. This Permit Condition becomes effective 180 days after the date of Permit issuance.

ix. Any time that visible emissions determined in accordance with Condition 5.2.7 occur from any baghouse (Source Codes BH03, BH04, BH10, BH11, BH12, BH13, and BH43) for two consecutive determinations.

6.2 Specific Record Keeping and Reporting Requirements

Record Keeping Requirements

6.2.1 The Permittee shall determine and record the daily average hourly wet process input weight rate in tons per hour to the four wood flake dryers (Source Codes RD01, RD02, RD03, and RD04) on a combined basis for each day (or portion thereof) of dryer operation. For purposes of this Permit Condition, a day is defined as the period of time from 12:00 midnight to the following midnight. The Permittee shall maintain all calculations used to determine said parameter. [391-3-1-.02(6)(b)1(i) and 40 CFR 70.6(a)(3)]

6.2.2 The Permittee shall maintain records which show the dimension of each and an analysis showing the capacity of each storage tank with Source Codes V016, V017, V018, V019, V020, V021, V022, and V023. The Permittee shall maintain these records in a format suitable and available for inspection for the life of each storage tank with Source Codes V016, V017, V019, V019, V020, V021, V022, and V023. [40 CFR 60.116b(a) and 40 CFR 60.116b(b)]

PART 7.0 OTHER SPECIFIC REQUIREMENTS

7.1 Operational Flexibility

7.1.1 The Permittee may make Section 502(b)(10) changes as defined in 40 CFR 70.2 without requiring a Permit revision, if the changes are not modifications under any provisions of Title I of the Federal Act and the changes do not exceed the emissions allowable under the Permit (whether expressed therein as a rate of emissions or in terms of total emissions). For each such change, the Permittee shall provide the Division and the EPA with written notification as required below in advance of the proposed changes and shall obtain any Permits required under Rules 391-3-1-.03(1) and (2). The Permittee and the Division shall attach each such notice to their copy of this Permit.
[391-3-1-.03(10)(b)5 and 40 CFR 70.4(b)(12)(i)]

a. For each such change, the Permittee's written notification and application for a construction Permit shall be submitted well in advance of any critical date (typically at least 90 days in advance of any commencement of construction, Permit issuance date, etc.) involved in the change, but no less than seven (7) days in advance of such change and shall include a brief description of the change within the Permitted facility, the date on which the change is proposed to occur, any change in emissions, and any Permit term or condition that is no longer applicable as a result of the change.

b. The Permit shield described in Condition 8.16.1 shall not apply to any change made pursuant to this condition.

7.2 Off-Permit Changes

7.2.1 The Permittee may make changes that are not addressed or prohibited by this Permit, other than those described in Condition 7.2.2 below, without a Permit revision, provided the following requirements are met:
[391-3-1-.03(10)(b)6 and 40 CFR 70.4(b)(14)]

a. Each such change shall meet all applicable requirements and shall not violate any existing Permit term or condition.

b. The Permittee must provide contemporaneous written notice to the Division and to the EPA of each such change, except for changes that qualify as insignificant under Rule 391-3-1-.03(10)(g). Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.

c. The change shall not qualify for the Permit shield in Condition 8.16.1.

d. The Permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the Permit, and the emissions resulting from those changes.

e. The source shall obtain any Permits required under Rules 391-3-1-.03(1) and (2).

7.2.2 The Permittee shall not make, without a Permit revision, any changes that are not addressed or prohibited by this Permit, if such changes are subject to any requirements under Title IV of the Federal Act or are modifications under any provision of Title I of the Federal Act.
[Rule 391-3-1-.03(10)(b)7 and 40 CFR 70.4(b)(15)]

7.3 Alternative Requirements
[White Paper #2]

Not Applicable

7.4 Insignificant Activities
(see Attachment B for the list of Insignificant Activities in existence at the facility at the time of permit issuance)

7.5 Temporary Sources
[391-3-1-.03(10)(d)5 and 40 CFR 70.6(e)]

Not Applicable

7.6 Short-term Activities
(see Section 4.40 of Permit application and White Paper #1)

7.6.1 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from the tub grinder, any gases which contain visible emissions in excess of twenty (20) percent. [391-3-1-.02(2)(n)]

7.7 Compliance Schedule/Progress Reports
[391-3-1-.03(10)(d)3 and 40 CFR 70.6(c)(4)]

None applicable.

7.8 Emissions Trading
[391-3-1-.03(10)(d)1(ii) and 40 CFR 70.6(a)(10)]

Not Applicable

7.9 Acid Rain Requirements

Not Applicable

7.10 Prevention of Accidental Releases (Section 112(r) of the 1990 CAAA)
[391-3-1-.02(10)]

7.10.1 When and if the requirements of 40 CFR Part 68 become applicable, the Permittee shall comply with all applicable requirements of 40 CFR Part 68, including the following.

a. The Permittee shall submit a Risk Management Plan (RMP) as provided in 40 CFR Part 68.150 through 68.185. The RMP shall include a registration that reflects all covered processes.

b. For processes eligible for Program 1, as provided in 40 CFR 68.10, the Permittee shall comply with 7.10.1.a. and the following additional requirements:

i. Analyze the worst-case release scenario for the process(es), as provided in 40 CFR 68.25; document that the nearest public receptor is beyond the distance to a toxic or flammable endpoint defined in 40 CFR 68.22(a); and submit in the RMP the worst-case release scenario as provided in 40 CFR 68.165.

ii. Complete the five-year accident history for the process as provided in 40 CFR 68.42 and submit in the RMP as provided in 40 CFR 68.168
iii. Ensure that response actions have been coordinated with local emergency planning and response agencies
iv. Include a certification in the RMP as specified in specified in 40 CFR 68.12(b)(4)

c. For processes subject to Program 2, as provided in 40 CFR 68.10, the Permittee shall comply with 7.10.1.a., 7.10.1.b. and the following additional requirements:

i. Develop and implement a management system as provided in 40 CFR 68.15
ii. Conduct a hazard assessment as provided in 40 CFR 68.20 through 68.42
iii. Implement the Program 2 prevention steps provided in 40 CFR 68.48 through 68.60 or implement the Program 3 prevention steps provided in 40 CFR 68.65 through 68.87
iv. Develop and implement an emergency response program as provided in 40 CFR 68.90 through 68.95
v. Submit as part of the RMP the data on prevention program elements for Program 2 processes as provided in 40 CFR 68.170

d. For processes eligible for Program 3, as provided in 40 CFR 68.10, the Permittee shall comply with 7.10.1.a., 7.10.1.b. and the following additional requirements:

i. Develop and implement a management system as provided in 40 CFR 68.15
ii. Conduct a hazard assessment as provided in 40 CFR 68.20 through 68.42
iii. Implement the prevention requirements of 40 CFR 68.65 through 68.87
iv. Develop and implement an emergency response program as provided in 40 CFR 68.90 through 68.95
v. Submit as part of the RMP the data on prevention program elements for Program 3 as provided in 40 CFR 68.175

e. All reports and notification required by 40 CFR Part 68 must be submitted electronically (e.g., diskette or compact disc) to:

Attention: RMP*Submit
RMP Reporting Center
P.O. Box 3346
Merrifield, VA 22116-3346

Compliance with all requirements of this condition, including the registration and submission of the RMP, shall be included as part of the compliance certification submitted in accordance with Condition 8.14.1.

7.11 Stratospheric Ozone Protection Requirements (Title VI of the CAAA of 1990)

7.11.1 If the Permittee performs any of the activities described below or as otherwise defined in 40 CFR Part 82, the Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliance must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to 40 CFR 82.166.
[Note: “MVAC-like appliance” is defined in 40 CFR 82.152.]

e. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR 82.156.

f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

7.11.2 If the Permittee performs a service on motor (fleet) vehicles and if this service involves an ozone-depleting substance (refrigerant) in the MVAC, the Permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include air-tight sealed refrigeration systems used for refrigerated cargo, or air conditioning systems on passenger buses using HCFC-22 refrigerant.

7.12 Revocation of Existing Permits and Amendments

The following Air Quality Permits and Amendments are hereby revoked:

Air Quality Permit Number(s)	Dates of Original Permit Issuance or Amendment
2493-081-0054-E-01-0	April 27, 2000
2493-081-0054-E-01-1	August 14, 2001

7.13Pollution Prevention

Not Applicable

7.14 Specific Conditions

None applicable.

PART 8.0 GENERAL PROVISIONS

8.1 Terms and References

8.1.1 Terms not otherwise defined in the Permit shall have the meaning assigned to such terms in the referenced regulation.

8.1.2 Where more than one condition in this Permit applies to an emission unit and/or the entire facility, each condition shall apply and the most stringent condition shall take precedence.
[391-3-1-.02(2)(a)2]

8.2 EPA Authorities

8.2.1 Except as identified as "State-only enforceable" requirements in this Permit, all terms and conditions contained herein shall be enforceable by the EPA and citizens under the Clean Air Act, as amended, 42 U.S.C. 7401, et seq.
[40 CFR 70.6(b)(1)]

8.2.2 Nothing in this Permit shall alter or affect the authority of the EPA to obtain information pursuant to 42 U.S.C. 7414, "Inspections, Monitoring, and Entry."
[40 CFR 70.6(f)(3)(iv)]

8.2.3 Nothing in this Permit shall alter or affect the authority of the EPA to impose emergency orders pursuant to 42 U.S.C. 7603, "Emergency Powers."
[40 CFR 70.6(f)(3)(i)]

8.3 Duty to Comply

8.3.1 The Permittee shall comply with all conditions of this operating Permit. Any Permit noncompliance constitutes a violation of the Federal Clean Air Act and the Georgia Air Quality Act and/or State rules and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application. Any noncompliance with a Permit condition specifically designated as enforceable only by the State constitutes a violation of the Georgia Air Quality Act and/or State rules only and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(6)(i)]

8.3.2 The Permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(6)(ii)]

8.3.3 Nothing in this Permit shall alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of Permit issuance.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(f)(3)(ii)]

8.3.4 Issuance of this Permit does not relieve the Permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Director or any other federal, state, or local agency.
[391-3-1-.03(10)(e)1(iv) and 40 CFR 70.7(a)(6)]

8.4 Fee Assessment and Payment

8.4.1 The Permittee shall calculate and pay an annual Permit fee to the Division. The amount of fee shall be determined each year in accordance with the "Procedures for Calculating Air Permit Fees." [391-3-1-.03(9)]

8.5 Permit Renewal and Expiration

8.5.1 This Permit shall remain in effect for five (5) years from the date of issuance. The Permit shall become null and void after the expiration date unless a timely and complete renewal application has been submitted to the Division at least six (6) months, but no more than eighteen (18) months prior to the expiration date of the Permit.
[391-3-1-.03(10)(d)1(i), (e)2, and (e)3(ii) and 40 CFR 70.5(a)(1)(iii)]

8.5.2 Permits being renewed are subject to the same procedural requirements, including those for public participation and affected State and EPA review, that apply to initial Permit issuance.
[391-3-1-.03(10)(e)3(i)]

8.5.3 Notwithstanding the provisions in 8.5.1 above, if the Division has received an application for renewal, deemed it administratively complete, and failed to reissue the Permit for reasons other than cause, authorization to operate shall continue beyond the expiration date to the point of Permit modification, reissuance, or revocation.
[391-3-1-.03(10)(e)3(iii)]

8.6 Transfer of Ownership or Operation

8.6.1 This Permit is not transferable by the Permittee. Future owners and operators shall obtain a new Permit from the Director. The new Permit may be processed as an administrative amendment if no other change in this Permit is necessary, and provided that a written agreement containing a specific date for transfer of Permit responsibility coverage and liability between the current and new Permittee has been submitted to the Division at least thirty (30) days in advance of the transfer.
[391-3-1-.03(4)]

8.7 Property Rights

8.7.1 This Permit shall not convey property rights of any sort, or any exclusive privileges.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(6)(iv)]

8.8 Submissions

8.8.1 Reports, test data, monitoring data, notifications, annual certifications, and requests for revision and renewal shall be submitted to:

Georgia Department of Natural Resources
Environmental Protection Division
Air Protection Branch
Atlanta Tradeport, Suite 120
4244 International Parkway
Atlanta, Georgia 30354-3908

8.8.2 Any records, compliance certifications, and monitoring data required by the provisions in this Permit to be submitted to the EPA shall be sent to:

Air and EPCRA Enforcement Branch
U. S. EPA Region 4
61 Forsyth Street
Atlanta, Georgia 30303

8.8.3 Any application form, report, or compliance certification submitted pursuant to this Permit shall contain a certification by a responsible official of its truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
[391-3-1-.03(10)(c)2, 40 CFR 70.5(d) and 40 CFR 70.6(c)(1)]

8.8.4 Unless otherwise specified, all submissions under this permit shall be submitted to the Division only.

8.9 Duty to Provide Information

8.9.1 The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the Permit application, shall promptly submit such supplementary facts or corrected information to the Division.
[391-3-1-.03(10)(c)5]

8.9.2 The Permittee shall furnish to the Division, in writing, information that the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the Permit, or to determine compliance with the Permit. Upon request, the Permittee shall also furnish to the Division copies of records that the Permittee is required to keep by this Permit or, for information claimed to be confidential, the Permittee may furnish such records directly to the EPA, if necessary, along with a claim of confidentiality.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(6)(v)]

8.10 Modifications

8.10.1 Prior to any source commencing a modification as defined in 391-3-1-.01(pp) that may result in air pollution and not exempted by 391-3-1-.03(6), the Permittee shall submit a Permit application to the Division. The application shall be submitted sufficiently in advance of any critical date involved to allow adequate time for review, discussion, or revision of plans, if necessary. Such application shall include, but not be limited to, information describing the precise nature of the change, modifications to any emission control system, production capacity of the plant before and after the change, and the anticipated completion date of the change. The application shall be in the form of a Georgia air quality Permit application to construct or modify (otherwise known as a SIP application) and shall be submitted on forms supplied by the Division, unless otherwise notified by the Division.
[391-3-1-.03(1) through (8)]

8.11 Permit Revision, Revocation, Reopening and Termination

8.11.1 This Permit may be revised, revoked, reopened and reissued, or terminated for cause by the Director. The Permit will be reopened for cause and revised accordingly under the following circumstances:
[391-3-1-.03(10)(d)1(i)]

a. If additional applicable requirements become applicable to the source and the remaining Permit term is one (1) year or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the Permit is due to expire;
[391-3-1-.03(10)(e)6(i)(I)]

b. If any additional applicable requirements of the Acid Rain Program become applicable to the source;
[391-3-1-.03(10)(e)6(i)(II)] (Acid Rain sources only)

c. The Director determines that the Permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of the Permit; or
[391-3-1-.03(10)(e)6(i)(III) and 40 CFR 70.7(f)(1)(iii)]

d. The Director determines that the Permit must be revised or revoked to assure compliance with the applicable requirements.
[391-3-1-.03(10)(e)6(i)(IV) and 40 CFR 70.7(f)(1)(iv)]

8.11.2 Proceedings to reopen and reissue a Permit shall follow the same procedures as applicable to initial Permit issuance and shall affect only those parts of the Permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable.
[391-3-1-.03(10)(e)6(ii)]

8.11.3 Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Director at least thirty (30) days in advance of the date the Permit is to be reopened, except that the Director may provide a shorter time period in the case of an emergency.
[391-3-1-.03(10)(e)6(iii)]

8.11.4 All Permit conditions remain in effect until such time as the Director takes final action. The filing of a request by the Permittee for any Permit revision, revocation, reissuance, or termination, or of a notification of planned changes or anticipated noncompliance, shall not stay any Permit condition.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(6)(iii)]

8.11.5 **State Only Enforceable Condition.**
At any time that the Director determines that additional control of emissions from the facility may reasonably be needed to provide for the continued protection of public health, safety and welfare, the Director reserves the right to amend the provisions of this Permit pursuant to the Director's authority as established in the Georgia Air Quality Act and the rules adopted pursuant to that Act.
[391-3-1-.02(2)(a)3]

8.11.6 A Permit revision shall not be required for changes that are explicitly authorized by the conditions of this Permit.

8.11.7 A Permit revision shall not be required for changes that are part of an approved economic incentive, marketable Permit, emission trading, or other similar program or process for change which is specifically provided for in this Permit.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(8)]

8.12 Severability

8.12.1 Any condition or portion of this Permit which is challenged, becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this Permit.
[391-3-1-.03(10)(d)1(i) and 40 CFR 70.6(a)(5)]

8.13 Excess Emissions Due to an Emergency

8.13.1 An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the Permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
[391-3-1-.03(10)(d)7 and 40 CFR 70.6(g)(1)]

8.13.2 An emergency shall constitute an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the Permittee demonstrates, through properly signed contemporaneous operating logs or other relevant evidence, that:
[391-3-1-.03(10)(d)7 and 40 CFR 70.6(g)(2) and (3)]

a. An emergency occurred and the Permittee can identify the cause(s) of the emergency;

b. The Permitted facility was at the time of the emergency being properly operated;

c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in the Permit; and

d. The Permittee promptly notified the Division and submitted written notice of the emergency to the Division within two (2) working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

8.13.3 In an enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency shall have the burden of proof.
[391-3-1-.03(10)(d)7 and 40 CFR 70.6(g)(4)]

8.13.4 The emergency conditions listed above are in addition to any emergency or upset provisions contained in any applicable requirement.
[391-3-1-.03(10)(d)7 and 40 CFR 70.6(g)(5)]

8.14 Compliance Requirements

8.14.1 Compliance Certification

The Permittee shall provide written certification to the Division and to the EPA, at least annually, of compliance with the conditions of this Permit. The annual written certification shall be postmarked no later than January 30 of each year and shall be submitted to the Division and to the EPA. The certification shall include, but not be limited to, the following elements:
[391-3-1-.03(10)(d)3 and 40 CFR 70.6(c)(5)]

a. The identification of each term or condition of the Permit that is the basis of the certification;

b. The status of compliance with the terms and conditions of the permit for the period covered by the certification, based on the method or means designated in paragraph c below. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 occurred;

c. The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period and whether such methods or other means provide continuous or intermittent data;

d. Any other information that must be included to comply with section 113(c)(2) of the Act, which prohibits knowingly making a false certification or omitting material information; and

e. Any additional requirements specified by the Division.

8.14.2 Inspection and Entry

a. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow authorized representatives of the Division to perform the following:
[391-3-1-.03(10)(d)3 and 40 CFR 70.6(c)(2)]

   i. Enter upon the Permittee's premises where a Part 70 source is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this Permit;
   ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
   iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this Permit; and
   iv. Sample or monitor any substances or parameters at any location during operating hours for the purpose of assuring Permit compliance or compliance with applicable requirements as authorized by the Georgia Air Quality Act.

b. No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for Permit revocation and assessment of civil penalties.
[391-3-1-.07 and 40 CFR 70.11(a)(3)(i)]

8.14.3 Schedule of Compliance

a. For applicable requirements with which the Permittee is in compliance, the Permittee shall continue to comply with those requirements.
[391-3-1-.03(10)(c)2 and 40 CFR 70.5(c)(8)(iii)(A)]

b. For applicable requirements that become effective during the Permit term, the Permittee shall meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement.
[391-3-1-.03(10)(c)2 and 40 CFR 70.5(c)(8)(iii)(B)]

c. Any schedule of compliance for applicable requirements with which the source is not in compliance at the time of Permit issuance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.
[391-3-1-.03(10)(c)2 and 40 CFR 70.5(c)(8)(iii)(C)]

8.15 Circumvention

8.15.1 **State Only Enforceable Condition.**
The Permittee shall not build, erect, install, or use any article, machine, equipment or process the use of which conceals an emission which would otherwise constitute a violation of an applicable emission standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of the pollutants in the gases discharged into the atmosphere.
[391-3-1-.03(2)(c)]

8.16 Permit Shield

8.16.1 Compliance with the terms of this Permit shall be deemed compliance with all applicable requirements as of the date of Permit issuance provided that all applicable requirements are included and specifically identified in the Permit.
[391-3-1-.03(10)(d)6]

8.16.2 Any Permit condition identified as "State only enforceable" does not have a Permit shield.

8.17 Operational Practices

8.17.1 At all times, including periods of startup, shutdown, and malfunction, the Permittee shall maintain and operate the source, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on any information available to the Division that may include, but is not limited to, monitoring results, observations of the opacity or other characteristics of emissions, review of operating and maintenance procedures or records, and inspection or surveillance of the source.
[391-3-1-.02(2)(a)10]

8.17.2 No person owning, leasing, or controlling, the operation of any air contaminant sources shall willfully, negligently or through failure to provide necessary equipment or facilities or to take necessary precautions, cause, permit, or allow the emission from said air contamination source or sources, of such quantities of air contaminants as will cause, or tend to cause, by themselves, or in conjunction with other air contaminants, a condition of air pollution in quantities or characteristics or of a duration which is injurious or which unreasonably interferes with the enjoyment of life or use of property in such area of the State as is affected thereby. Complying with Georgia's Rules for Air Quality Control Chapter 391-3-1 and Conditions in this Permit, shall in no way exempt a person from this provision.
[391-3-1-.02(2)(a)1]

8.18 Visible Emissions

[391-3-1-.02(2)(b)1]

8.18.1 Except as may be provided in other provisions of this Permit, the Permittee shall not cause, let, suffer, permit or allow emissions from any air contaminant source the opacity of which is equal to or greater than forty (40) percent.

8.18.2 The visible emission limitation in Condition 8.18.1 applies only to facilities or sources subject to some other emission limitation under Georgia Air Quality Control Rule 391-3-1-.02(2).

8.19 Fuel-burning Equipment

8.19.1 The Permittee shall not cause, let, suffer, permit, or allow the emission of fly ash and/or other particulate matter from any fuel-burning equipment with rated heat input capacity of less than 10 million Btu per hour, in operation or under construction on or before January 1, 1972 in amounts equal to or exceeding 0.7 pounds per million BTU heat input.
[391-3-1-.02(2)(d)]

8.19.2 The Permittee shall not cause, let, suffer, permit, or allow the emission of fly ash and/or other particulate matter from any fuel-burning equipment with rated heat input capacity of less than 10 million Btu per hour, constructed after January 1, 1972 in amounts equal to or exceeding 0.5 pounds per million BTU heat input.
[391-3-1-.02(2)(d)]

8.19.3 The Permittee shall not cause, let, suffer, permit, or allow the emission from any fuel-burning equipment constructed or extensively modified after January 1, 1972, visible emissions the opacity of which is equal to or greater than twenty (20) percent except for one six minute period per hour of not more than twenty-seven (27) percent opacity.
[391-3-1-.02(2)(d)]

8.20 Sulfur Dioxide

8.20.1 Except as may be specified in other provisions of this Permit, the Permittee shall not burn fuel containing more than 2.5 percent sulfur, by weight, in any fuel burning source that has a heat input capacity below 100 million Btu's per hour. [391-3-1-.02(2)(g)]

8.21 Particulate Emissions

8.21.1 Except as may be specified in other provisions of this Permit, the Permittee shall not cause, let, permit, suffer, or allow the rate of emission from any source, particulate matter in total quantities equal to or exceeding the allowable rates shown below. Equipment in operation, or under construction contract, on or before July 2, 1968, shall be considered existing equipment. All other equipment put in operation or extensively altered after said date is to be considered new equipment. [391-3-1-.02(2)(e)]

a. The following equations shall be used to calculate the allowable rates of emission from new equipment:

$E = 4.1P^{0.67}$; for process input weight rate up to and including 30 tons per hour.
$E = 55P^{0.11} - 40$; for process input weight rate above 30 tons per hour.

b. The following equation shall be used to calculate the allowable rates of emission from existing equipment:

$E = 4.1P^{0.67}$

In the above equations, E = emission rate in pounds per hour, and
P = process input weight rate in tons per hour.

8.22 Fugitive Dust
[391-3-1-.02(2)(n)]

8.22.1 Except as may be specified in other provisions of this Permit, the Permittee shall take all reasonable precautions to prevent dust from any operation, process, handling, transportation or storage facility from becoming airborne. Reasonable precautions that could be taken to prevent dust from becoming airborne include, but are not limited to, the following:

a. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

b. Application of asphalt, water, or suitable chemicals on dirt roads, materials, stockpiles, and other surfaces that can give rise to airborne dusts;

c. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods can be employed during sandblasting or other similar operations;

d. Covering, at all times when in motion, open bodied trucks, transporting materials likely to give rise to airborne dusts; and

e. The prompt removal of earth or other material from paved streets onto which earth or other material has been deposited.

8.22.2 The opacity from any fugitive dust source shall not equal or exceed 20 percent.

8.23 Use of Any Credible Evidence or Information

8.23.1 Notwithstanding any other provisions of any applicable rule or regulation or requirement of this permit, for the purpose of submission of compliance certifications or establishing whether or not a person has violated or is in violation of any emissions limitation or standard, nothing in this permit or any Emission Limitation or Standard to which it pertains, 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. [391-3-1-.02(3)(a)]

Attachments

A. List of Standard Abbreviations and List of Permit Specific Abbreviations
B. Insignificant Activities Checklist, Insignificant Activities Based on Emission Levels and Generic Emission Groups
C. List of References

ATTACHMENT A

List Of Standard Abbreviations

AIRS	Aerometric Information Retrieval System
APCD	Air Pollution Control Device
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BTU	British Thermal Unit
CAAA	Clean Air Act Amendments
CEM	Continuous Emission Monitor
CFR	Code of Federal Regulations
CMS	Continuous Monitoring System(s)
CO	Carbon Monoxide
COM	Continuous Opacity Monitor
dscf / dscm	Dry Standard Cubic Foot / Dry Standard Cubic Meter
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
gr	Grain(s)
GPM (gpm)	Gallons per minute
H_2O (H2O)	Water
HAP	Hazardous Air Pollutant
HCFC	Hydro-chloro-fluorocarbon
MACT	Maximum Achievable Control Technology
MMBtu	Million British Thermal Units
MMBtu/hr	Million British Thermal Units per hour
MVAC	Motor Vehicle Air Conditioner
MW	Megawatt
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x (NOx)	Nitrogen Oxides
NSPS	New Source Performance Standards
OCGA	Official Code of Georgia Annotated
PM	Particulate Matter
PM_{10} (PM10)	Particulate Matter less than 10 micrometers in diameter
PPM (ppm)	Parts per Million
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RMP	Risk Management Plan
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2 (SO2)	Sulfur Dioxide
USC	United States Code
VE	Visible Emissions
VOC	Volatile Organic Compound

List of Permit Specific Abbreviations

RTO	Regenerative Thermal Oxidizer
deg	degrees

ATTACHMENT B

NOTE: Attachment B contains information regarding insignificant emission units/activities and groups of generic emission units/activities in existence at the facility at the time of Permit issuance. Future modifications or additions of insignificant emission units/activities and equipment that are part of generic emissions groups may not necessarily cause this attachment to be updated.

INSIGNIFICANT ACTIVITIES CHECKLIST

Category	Description of Insignificant Activity/Unit	Quantity
Mobile Sources	1. Cleaning and sweeping of streets and paved surfaces	0
Combustion Equipment	1. Fire fighting and similar safety equipment used to train fire fighters or other emergency personnel.	0
	2. Small incinerators that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act and are not considered a "designated facility" as specified in 40 CFR 60.32e of the Federal emissions guidelines for Hospital/Medical/Infectious Waste Incinerators, that are operating as follows:	0
	i) Less than 8 million BTU/hr heat input, firing types 0, 1, 2, and/or 3 waste.	0
	ii) Less than 8 million BTU/hr heat input with no more than 10% pathological (type 4) waste by weight combined with types 0, 1, 2, and/or 3 waste.	0
	iii) Less than 4 million BTU/hr heat input firing type 4 waste. (Refer to 391-3-1-.03(10)(g)2.(ii) for descriptions of waste types)	0
	3. Open burning in compliance with Georgia Rule 391-3-1-.02 (5).	0
	4. Stationary engines burning: i) Natural gas, LPG, gasoline, dual fuel, or diesel fuel which are used exclusively as emergency generators;	1
	ii) Natural gas, LPG, and/or diesel fueled generators used for emergency, peaking, and/or standby power generation, where the combined peaking and standby power generation do not exceed 200 hours per year.	0
	iii) Natural gas, LPG, and/or diesel fuel used for other purposes, provided that the output of each engine does not exceed 400 horsepower and that no individual engine operates for more than 2,000 hours per year.	0
	iv) Gasoline used for other purposes, provided that the output of each engine does not exceed 100 horsepower and that no individual engine operates for more than 500 hours per year.	0
Trade Operations	1. Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities whose emissions of hazardous air pollutants (HAPs) fall below 1,000 pounds per year.	0
Maintenance, Cleaning, and Housekeeping	1. Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system (or collector) serving them exclusively.	0
	2. Portable blast-cleaning equipment.	0
	3. Non-Perchloroethylene Dry-cleaning equipment with a capacity of 100 pounds per hour or less of clothes.	0
	4. Cold cleaners having an air/vapor interface of not more than 10 square feet and that do not use a halogenated solvent.	3
	5. Non-routine clean out of tanks and equipment for the purposes of worker entry or in preparation for maintenance or decommissioning.	Varies
	6. Devices used exclusively for cleaning metal parts or surfaces by burning off residual amounts of paint, varnish, or other foreign material, provided that such devices are equipped with afterburners.	0
	7. Cleaning operations: Alkaline phosphate cleaners and associated cleaners and burners.	0

INSIGNIFICANT ACTIVITIES CHECKLIST

Category	Description of Insignificant Activity/Unit	Quantity
Laboratories and Testing	1. Laboratory fume hoods and vents associated with bench-scale laboratory equipment used for physical or chemical analysis.	0
	2. Research and development facilities, quality control testing facilities and/or small pilot projects, where combined daily emissions from all operations are not individually major or are support facilities not making significant contributions to the product of a collocated major manufacturing facility.	3
Pollution Control	1. Sanitary waste water collection and treatment systems, except incineration equipment or equipment subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act..	0
	2. On site soil or groundwater decontamination units that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act.	0
	3. Bioremediation operations units that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act.	0
	4. Landfills that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act.	0
Industrial Operations	1. Concrete block and brick plants, concrete products plants, and ready mix concrete plants producing less than 125,000 tons per year.	0
	2. Any of the following processes or process equipment which are electrically heated or which fire natural gas, LPG or distillate fuel oil at a maximum total heat input rate of not more than 5 million BTU's per hour:	0
	i) Furnaces for heat treating glass or metals, the use of which do not involve molten materials or oil-coated parts.	0
	ii) Porcelain enameling furnaces or porcelain enameling drying ovens.	0
	iii) Kilns for firing ceramic ware.	0
	iv) Crucible furnaces, pot furnaces, or induction melting and holding furnaces with a capacity of 1,000 pounds or less each, in which sweating or distilling is not conducted and in which fluxing is not conducted utilizing free chlorine, chloride or fluoride derivatives, or ammonium compounds.	0
	v) Bakery ovens and confection cookers.	0
	3. Carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, shot blasting, shot peening, or polishing; ceramics, glass, leather, metals, plastics, rubber, concrete, paper stock or wood, also including roll grinding and ground wood pulping stone sharpening, provided that: i) Activity is performed indoors; & ii) No significant fugitive particulate emissions enter the environment; & iii) No visible emissions enter the outdoor atmosphere.	2
	4. Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy (e.g., blueprint activity, photographic developing and microfiche).	0
	5. Grain, food, or mineral extrusion processes	0
	6. Equipment used exclusively for sintering of glass or metals, but not including equipment used for sintering metal-bearing ores, metal scale, clay, fly ash, or metal compounds.	0
	7. Equipment for the mining and screening of uncrushed native sand and gravel.	0
	8. Ozonization process or process equipment.	0
	9. Electrostatic powder coating booths with an appropriately designed and operated particulate control system.	0
	10. Activities involving the application of hot melt adhesives where VOC emissions are less than 5 tons per year and HAP emissions are less than 1,000 pounds per year.	0
	11. Equipment used exclusively for the mixing and blending water-based adhesives and coatings at ambient temperatures.	0
	12. Equipment used for compression, molding and injection of plastics where VOC emissions are less than 5 tons per year and HAP emissions are less than 1,000 pounds per year.	0
	13. Ultraviolet curing processes where VOC emissions are less than 5 tons per year and HAP emissions are less than 1,000 pounds per year.	0

INSIGNIFICANT ACTIVITIES CHECKLIST

Category	Description of Insignificant Activity/Unit	Quantity
Storage Tanks and Equipment	1. All petroleum liquid storage tanks storing a liquid with a true vapor pressure of equal to or less than 0.50 psia as stored.	0
	2. All petroleum liquid storage tanks with a capacity of less than 40,000 gallons storing a liquid with a true vapor pressure of equal to or less than 2.0 psia as stored that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act.	0
	3. All petroleum liquid storage tanks with a capacity of less than 10,000 gallons storing a petroleum liquid.	2
	4. All pressurized vessels designed to operate in excess of 30 psig storing petroleum fuels that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act.	4
	5. Gasoline storage and handling equipment at loading facilities handling less than 20,000 gallons per day or at vehicle dispensing facilities that are not subject to any standard, limitation or other requirement under Section 111 or 112 (excluding 112(r)) of the Federal Act.	1
	6. Portable drums, barrels, and totes provided that the volume of each container does not exceed 550 gallons.	157
	7. All chemical storage tanks used to store a chemical with a true vapor pressure of less than or equal to 10 millimeters of mercury (0.19 psia).	2

INSIGNIFICANT ACTIVITIES BASED ON EMISSION LEVELS

Description of Emission Units / Activities	Quantity
Globe Edge Seal Paint Booth	1
Tongue and Groove Edge Seal Paint Booth	1
Stencil Ink Application	1
Roll Coater Ink Application	1
Warehouse	1
Wood Co-Product System	1
Wastewater Treatment System (Spray Field, Storage Pond, and Wet Well)	1
Resin Storage Tanks	6
Log Debarkers	4

ATTACHMENT B (continued)

GENERIC EMISSION GROUPS

Emission units/activities appearing in the following table are subject only to one or more of Georgia Rules 391-3-1-.02 (2) (b), (e) &/or (n). Potential emissions of particulate matter, from these sources based on TSP, are less than 25 tons per year per process line or unit in each group. Any emissions unit subject to a NESHAP, NSPS, or any specific Air Quality Permit Condition(s) are not included in this table.

Description of Emissions Units / Activities	Number of Units (if appropriate)	Applicable Rules		
		Opacity Rule (b)	PM from Mfg Process Rule (e)	Fugitive Dust Rule (n)
Wood Co-Product Piles	Varies	X		X

The following table includes groups of fuel burning equipment subject only to Georgia Rules 391-3-1-.02 (2) (b) & (d).Any emissions unit subject to a NESHAP, NSPS, or any specific Air Quality Permit Condition(s) are not included in this table.

Description of Fuel Burning Equipment	Number of Units
Fuel burning equipment with a rated heat input capacity of less than 10 million BTU/hr burning only natural gas and/or LPG.	2
Fuel burning equipment with a rated heat input capacity of less than 5 million BTU/hr, burning only distillate fuel oil, natural gas and/or LPG.	0
Any fuel burning equipment with a rated heat input capacity of 1 million BTU/hr or less.	0

ATTACHMENT C

LIST OF REFERENCES

1. The Georgia Rules for Air Quality Control Chapter 391-3-1. All Rules cited herein which begin with 391-3-1 are State Air Quality Rules.

2. Title 40 of the Code of Federal Regulations; specifically 40 CFR Parts 50, 51, 52, 60, 61, 63, 64, 68, 70, 72, 73, 75, 76 and 82. All rules cited with these parts are Federal Air Quality Rules.

3. ***Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, Procedures for Testing and Monitoring Sources of Air Pollutants.***

4. ***Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, Procedures for Calculating Air Permit Fees***.

5. Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources. This information may be obtained from EPA's TTN web site at *www.epa.gov/ttn/chief/ap42.html.*

6. The latest properly functioning version of EPA's **TANKS** emission estimation software. The software may be obtained from EPA's TTN web site at *www.epa.gov/ttn/chief/tanks.html.*

7. The Clean Air Act (42 U.S.C. 7401 et seq).

8. White Paper for Streamlined Development of Part 70 Permit Applications, July 10, 1995 (White Paper #1).

9. White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program, March 5, 1996 (White Paper #2).

APPENDIX C

EMISSIONS CALCULATIONS

Stack Identification Source Control		S201 Dryer Exhaust (RTO)[c]	S202 Press Exhaust (RTO)*	S203 Resinated Fines (Baghouse)[b]	S204 Un-Resinated Fines (Baghouse)[b]	S205 Finishing Line (Baghouse)[b]	S206 Wet Strand Fines (Baghouse)[b]	S207 Dry Fuel Bin (Baghouse)[b]	S208 Blowline (Baghouse)
Discharged Flow Rate	ACFM	250,000	136,710	45,000	45,000	45,000	45,000	50,000	6,500
	DSCFM	162,910	100,000	44,158	44,158	44,158	44,158	49,065	6,105
Stack Exit Diameter	ft	8.0	6.0	3.5	3.5	3.5	3.5	2.3	1.3
Stack exit velocity	ft/sec	82.9	80.6	78.0	78.0	78.0	78.0	193.5	81.7
Temperature of Discharge	°F	275	245	Ambient	Ambient	Ambient	Ambient	Ambient	93
Gas Moisture Content[a]	%v/v, wet	25%	2.7%	1.5%	1.5%	1.5%	1.5%	1.5%	2.0%
Stack Height above Grade	ft	50	50	50	50	50	50	50	50
Throughput used in calcs	MSF/hr (3/8" basis)	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2
	MSF/yr (3/8" basis)	650,000	650,000	650,000	650,000	650,000	650,000	650,000	650,000
	ODT/hr	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9
	ODT/yr	455000	455000	455000	455000	455000	455000	455000	455000
Emissions									
Particulate	gr/dscf	0.02	0.00655	0.005	0.005	0.005	0.005	0.005	0.005
	lb/hr	35.0	4.0	1.0	1.0	1.0	1.0	1.6	0.5
NOx*	lb/MMBtu or lb/MSF 3/8"	0.25	0.25	--	--	--	--	--	--
	lb/hr	78.4	20.4	--	--	--	--	--	--
VOCs*	lb/ODT or lb/MSF 3/8"	0.66	0.14	0.16	0.12	0.015	0.12	0.06	--
	lb/hr	59.8	11.4	11.9	8.9	1.1	8.9	4.5	--
HCOC**	lb/ODT or lb/MSF 3/8"	0.057	0.0042	0.0036	0.0024	0.0026	0.0008	0.0003	--
	lb/hr	4.7	0.51	0.27	0.18	0.19	0.06	0.02	--
Phenols**	lb/ODT or lb/MSF 3/8"	0.021	0.029	--	--	--	--	--	--
	lb/hr	1.71	2.4	--	--	--	--	--	--
Methanol**	lb/ODT or lb/MSF 3/8"	0.0082	0.04	0.1171	0.0709	0.0076	0.002	0.0015	--
	lb/hr	0.67	3.0	8.7	5.3	0.56	0.13	0.11	--
CO	lb/MMBtu	0.25	--	--	--	--	--	--	--
	lb/ODT or lb/MSF 3/8"	--	0.3	--	--	--	--	--	--
	lb/hr	78.4	24.5	--	--	--	--	--	--
SO2	lb/hr	0.7	2.7						
Emissions in TPY									TOTAL
Particulate	TPY	153	17.4	4.4	4.4	4.4	4.4	7.0	197
NOx*	TPY	343	89	--	--	--	--	--	433
VOCs*	TPY	262	50	52	39	5	39	19.5	466
HCOC**	TPY	20.4	2.2	1.2	0.8	0.8	0.3	0.1	25.8
Phenols**	TPY	7.5	10.4	--	--	--	--	--	17.9
Methanol**	TPY	2.9	13.0	38.1	23.0	2.5	0.6	0.5	80.6
CO	TPY	343	107	--	--	--	--	--	451
SO2	TPY	2.6	12.0	--	--	--	--	--	14.7

* - Particulate emissions for press TO based on existing source test data. NOx, VOC and CO emissions for dryer and press TOs are an estimate from experience at other facilities.

** - Emissions derived from factors used in TRI, AP-42, or NCASI and adding approximately 10% to the pounds per hour calculation.

a = Gas moisture content based on stack test data from Norbord facilities with similar operations

b = VOC, Formaldehyde, and Methanol Emissions derived from a Norbord facility. Facility testing of current baghouses will be undertaken in the near future.
All other information is provided by vendors.

c = NOx emissions in this table for the new source are based on vendor guarantees.
Formaldehyde emissions from previous testing of the existing dryers was approximately 37 lb/hr (no RTO).

	Stack ID	Source ID	APC ID	Future Potential Emissions PM (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)	HCHO (tpy)	Phenol (tpy)	MeOH (tpy)	HAP (tpy)
Current Sources	S001	WESP (Dryers)	WP01	310	131	569	1,402	1.96	63.0	1.82	14.0	112
	S003	System #1	BH03	0.18	--	--	78.8	--	0.3	--	26.0	26.3
	S004	System #2	BH04	0.44	--	--	26.3	--	0.15	--	8.00	8.15
	S010	High Pressure Waste System Baghouse	BH10	4.99	--	--	8.15	--	0.05	--	0.02	0.07
	S011	T&G Sander System Baghouse	BH11	1.88	--	--	0.07	--	--	--	--	--
	S012	T&G Saw Line System Baghouse	BH12	0.79	--	--	--	--	--	--	--	--
	S013	Globe Line Saw System Baghouse	BH13	2.32	--	--	--	--	--	--	--	--
	S043	Dry Fuel Storage Silo Baghouse	BH43[1]	--	--	--	--	--	--	--	--	--
	S063	RTO (Press)	RT63	29.0	70.0	44.0	10.0	7.40	2.20	5.80	4.00	12.2
	Total (Current Sources)			349	201	613	1,525	9.36	65.7	7.62	52.0	158.8
Proposed Sources	S201	Dryer Exhaust ([W]ESP/TO)	C201[2]	153	343	343	262	2.63	20.4	7.5	2.9	43.4
	S202	Press Exhaust (TO)	C202	17.4	89.4	107	50.1	12.0	2.23	10.4	13.0	28.5
	S203	Resinated Fines Baghouse	C203	4.38	--	--	52.0	--	1.17	--	38.1	39.2
	S204	Unresinated Fines Baghouse	C204	4.38	--	--	39.0	--	0.78	--	23.0	23.8
	S205	Finishing Line Baghouse	C205	4.38	--	--	4.88	--	0.85	--	2.5	3.32
	S206	Wet Strand Fines Baghouse	C206	4.38	--	--	39.0	--	0.26	--	0.6	0.82
	S207	Dry Fuel Bin Baghouse	C207	7.01	--	--	19.5	--	0.10	--	0.5	0.59
	S208	Blowline Baghouse	C208	2.19	--	--	--	--	--	--	--	--
	Total (Proposed Sources)			197	433	451	466	14.7	25.8	17.9	80.6	139.6
	Facility Wide Total			547	634	1,064	1,991	24.0	91	25.5	133	298.4

1. The current Dry Fuel Storage Silo Baghouse (BH43) will be replaced by a similar unit (C207) as part of the 2005 expansion project.
2. Final design configuration will include either a wet or dry ESP prior to the TO.

Source Description	Source Code	Stack ID	Control Description	APCD ID
Wellons/Dryers	WELL, RD01-RD04, GB01-GB04	S001	WESP	WP01
System #1	FLPP	S003	Baghouse	BH03
System #2	RS01-RS04, DB01-DB04, FB01-FB04	S004	Baghouse	BH04
High Pressure Waste System	HPWS	S010	Baghouse	BH10
T&G Sander System	TGSS	S011	Baghouse	BH11
T&G Saw Line System	TGSL	S012	Baghouse	BH12
Globe Line Saw System	GLSS	S013	Baghouse	BH13
Dry Fuel Storage Silo[1]	DFSS	S043	Baghouse	BH43
Press	PRES	S063	RTO	RT63
Energy System/Dryers	RD05-RD07, ES02	S201	(W)ESP/TO[2]	C201
Press	PRS2	S202	TO	C202
Resinated Fines	FLP2, FB05-FB06	S203	Baghouse	C203
Unresinated Fines	RS05-RS06	S204	Baghouse	C204
Finishing Line	L2SD, L2SS	S205	Baghouse	C205
Wet Strand Fines	GB05-GB06	S206	Baghouse	C206
Dry Fuel Bin	DFS2	S207	Baghouse	C207
Blowline	HPW2, DB05-DB06	S208	Baghouse	C208

1. The current Dry Fuel Storage Silo Baghouse (BH43) will be replaced by a similar unit (C207) as part of the 2005 expansion project.
2. Final design configuration will include either a wet or dry ESP prior to the TO.

APPENDIX D

BACT ANALYSIS—EPA CONTROL COST CALCULATIONS

Table D-1: Cost Analysis for WESP/RTO for VOC Control of the Rotary Dryers/Wellons

CAPITAL COSTS	
Direct Capital Costs	
RTOs[A]	4,400,000
WESP	3,700,000
Contingency (10% of total capital)	810,000
Miscellaneous capital items (buildings and structures, site improvements, equipment, electric substation)[B]	2,525,000
Engineering[B]	350,000
Total Capital Costs	**11,785,000**
Total Annualized Capital Costs (15 years at 7.0%)	**1,293,930**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr @ 2 devices - RTO and WESP)	21,035
Supervisor (15% of maintenance labor)	3,155
Maintenance Materials[C]	150,000
Utilities	
Natural Gas ($8.19/MMBtu@ 23.5 MMBtu/hr @ 8760 hr/yr)[D]	1,685,993
Electricity (1000kWh @ $0.042/kwh @ 8760 hr/yr)[C]	367,920
Total Annual Direct Operating Costs	2,228,104
Indirect Operating Costs[E]	
Overhead (60% of labor and maintenance)	104,514
PropertyTax (1% total capital costs)	117,850
Insurance (1% total capital costs)	117,850
Administration (2% total capital costs)	235,700
Total Annual Indirect Operating Costs	575,914
Total Annual Operating Cost	**2,804,018**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**4,097,947**
Uncontrolled VOC Emission Rate (lb/hr)	598.00
Uncontrolled VOC Emission Rate (tpy)	2,619
Minimum VOC Control Efficiency	90%
Pollutant Removed (tpy)	2,357.3
Cost per Ton of VOC Removed	**1,738**

[A] Megtec quote to Norbord - 2004.

[B] Based on costs for similar project at another Norbord facility.

[C] Electricity usage includes larger motors following RTO, and additional motors following WESP, per Norbord observations at similar RTO facilities. Maintenance material costs based on experience.

[D] Natural gas cost per Norbord Georgia Inc., September 2004. Gas usage requirements esimated as per experience and information obtained from Megtec.

[E] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112

Table D-2: Cost Analysis for RTO for VOC Control of Press

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A]	1,853,400
Contingency (10% of total capital)	185,340
Additional prefilter for PM/PM_{10} control[C]	200,000
Miscellaneous capital items (electric substation)[D]	238,821
Contingency on miscellaneous items (10% of total capital)	23,882
Total Capital Costs	**2,501,443**
Total Annualized Capital Costs (15 years at 7.0%)	**274,645**
OPERATING COSTS	
Direct Operating Costs	
Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	10,517
Supervisor (15% of maintenance labor)	1,578
Maintenance Materials(100% of maintenance labor)	10,517
Utilities	
Natural Gas ($8.19/MMBtu@ 6.0 MMBtu/hr @ 8760 hr/yr)[A]	430,466
Electricity (325 kWh @ $0.042/kWh @ 8760 hr/yr)[A]	119,574
Annual Catalyst Cost (Lifetime 8 years) figured as Total Cost/8 Years	57,863
Annual Media Cost (Lifetime 10 years) figured as Total Cost/10 Years	15,000
Total Annual Direct Operating Costs	645,515
Indirect Operating Costs[B]	
Overhead (60% of labor and maintenance)	13,568
Property tax (1% total capital costs)	25,014
Insurance (1% total capital costs)	25,014
Administration (2% total capital costs)	50,029
Total Annual Indirect Operating Costs	113,625
Total Annual Operating Cost	**759,141**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**1,033,786**
Uncontrolled VOC Emission Rate (lb/hr)	88.00
Uncontrolled VOC Emission Rate (tpy)	385
Minimum VOC Control Efficiency	90%
Pollutant Removed (tpy)	346.9
Cost per Ton of VOC Removed	**2,980**

[A] Megtec, RTO Equipment Quote, February 2004.

[B] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112

[C] Additional PM/PM10 control equipment is necessary upstream of the RTO to prevent fouling of RTO.

Table D-3: Cost Analysis for Baghouses - PM/PM_{10} Control of Press

CAPITAL COSTS	
Direct Capital Costs	
Total Purchased Equipment and Installation [A,B]	2,800,000
Total Additional Equipment and Installation [A]	30,000
Contingency (10% of total capital)	283,000
Total Capital Costs	**3,113,000**
Total Annualized Capital Costs (15 years at 7%)	**341,791**
OPERATING COSTS	
Direct Operating Costs	
Operating Labor (2 hr/shift @ 3 shifts/day @ 365 days/yr @ 19.21/hr)	42,070
Maintenance Labor (1 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	21,035
Supervisor (15% of maintenance labor)	3,155
Maintenance Materials(100% of maintenance labor)	21,035
Utilities	
Electricity (325.8 kWh @ $0.042/kWh @ 8760 hr/yr)[A]	119,868
Total Annual Direct Operating Costs	207,163
Indirect Operating Costs[C]	
Overhead (60% of labor and maintenance)	27,135
Property Tax (1% total capital costs)	31,130
Insurance (1% total capital costs)	31,130
Administration (2% total capital costs)	62,260
Total Annual Indirect Operating Costs	151,655
Total Annual Operating Cost	**358,818**
Total Annual Cost (Annualized Capital Cost + Operating Cost)	**700,609**
Uncontrolled PM Emission Rate (lb/hr)	6.2
Uncontrolled PM Emission Rate (tpy)	27.2
PM Control Efficiency	99%
Pollutant Removed (tpy)	26.9
Cost per Ton of PM Removed	**26,060**

[A] KTC Panelboard Engineering, July 2004

[B] Costs were originally estimated in third quarter 1986 dollars and were scaled to first quarter 2000 dollars using the Marshall & Swift Equipment Index found in Chemical Engineering. July 2000.

[C] William M. Vatavuk, *Estimating Costs of Air Pollution Control* (Chelsea, MI: Lewis Publishers, 1990), Pg 112

Table D-4: Cost Analysis for TO(s) for VOC Control of a Baghouse

CAPITAL COSTS		
Direct Capital Costs		
	Total Purchased Equipment and Installation [A]	1,000,000
	Contingency (10% of total capital)	100,000
	Additional Prefilter for PM/PM_{10} control[D]	0
	Miscellaneous capital items (electric substation)[D]	200,000
	Contingency on miscellaneous items (10% of total capital)	20,000
Total Capital Costs		**1,320,000**
Total Annualized Capital Costs (15 years at 7.0%)		**144,929**
OPERATING COSTS		
Direct Operating Costs		
	Maintenance Labor (0.5 hr/shift @ 3 shifts/day @ 365 days/yr @ $19.21/hr)	10,517
	Supervisor (15% of maintenance labor)	1,578
	Maintenance Materials(100% of Maintenance Labor)	10,517
	Annual catalyst ($250,000/ 4 years) [B]	62,500
	Utilities	
	Natural gas ($8.19/MMBtu@ 3.5 MMBtu/hr @ 8760 hr/yr)[A]	251,105
	Electricity (200 kWh @ $0.042/kwh @ 8760 hr/yr)[A]	73,584
Total Annual Direct Operating Costs		409,802
Indirect Operating Costs[C]		
	Overhead (60% of labor and maintenance)	13,568
	Property Tax (1% total capital costs)	13,200
	Insurance (1% total capital costs)	13,200
	Administration (2% total capital costs)	26,400
Total Annual Indirect Operating Costs		66,368
Total Annual Operating Cost		**476,170**
Total Annual Cost (Annualized Capital Cost + Operating Cost)		**621,098**
Uncontrolled VOC Emission Rate (lb/hr)		8.00
Uncontrolled VOC Emission Rate (tpy)		35.0
VOC Control Efficiency		90%
Pollutant Removed (tpy)		31.5
Cost per Ton of VOC Removed		**19,695**

A Estimate, D. Lalonde. Verbally confirmed by Megtec on February 11, 2004.
B Estimate for catalyst cost and life based on typical industry catalyst performance
C William M. Vatavuk, Estimating Costs of Air Pollution Control (Chelsea, MI: Lewis Publishers, 1990), Pg 112
D Estimate. D. Lalonde

APPENDIX E

MODELING ANALYSIS DOCUMENTATION

ISC-PRIME/ISCST3 Comparative Analysis
Regional Source Inventory
Modeling Reference Figures

COMPARATIVE ANALYSIS FOR ISC-PRIME AND ISCST3

The dispersion modeling analyses were conducted using the Industrial Source Complex (ISC) model with **P**lume **RI**se **M**odel **E**nhancements (ISC-PRIME version 04269) to assess ambient impacts associated with Norbord's Cordele OSB Mill. The April 2000 proposed revisions to Appendix W of 40 CFR Part 51, *Guideline on Air Quality Models* recommend that ISC-PRIME be used in favor of ISCST3 in situations where building downwash has an important effect on ambient pollutant concentrations. U.S. EPA Region 4 considers the use of the ISC-PRIME for regulatory permitting purposes acceptable on a case-by-case basis. This comparative analysis is presented to justify the use of ISC-PRIME in this modeling analysis and illustrate the differences in model performance compared to the guideline ISCST3 model.

On April 21, 2000, the U.S. EPA proposed[51] that ISC-PRIME be included as a regulatory guideline model in 40 CFR Part 51, Appendix W. U.S. EPA has proposed to ultimately replace ISCST3 with AERMOD, a next generation model that includes the PRIME algorithms. Georgia EPD has indicated that U.S. EPA Region 4 considers the use of ISC-PRIME for regulatory permitting purposes prior to its formal acceptance as a guideline model acceptable on a case-by-case basis subject to agency review.[52] Notwithstanding the building downwash algorithms, AERMOD would be preferred over ISCST3 in a situation where complex terrain is of particular concern. For this analysis of the Cordele OSB Mill expansion project in middle Georgia, complex terrain is not a concern in the area immediately surrounding the facility, and therefore the use of ISC-PRIME is suitable and preferred in anticipation of the final release of AERMOD due to the significance of building downwash.

The primary improvements associated with the PRIME dispersion model are in the algorithms that predict pollutant concentrations for plumes that are affected by building downwash. Numerous comparative studies (including a draft consequence analysis prepared by the U.S. EPA) suggest that ISC-PRIME offers a considerably more accurate representation of building downwash effects.[53] Specifically, it improves upon the downwash algorithms of the ISCST3 model in which a stack was assumed to be located centrally adjacent to the lee side of the dominant downwash structure even though the stack may actually be located upwind, downwind and up to five building heights away, and/or laterally displaced, from the structure. In other words, even if a stack were located a significant distance away from a structure, ISCST3 would predict the downwash influence as if the stack is located directly adjacent to the structure. ISC-PRIME improves upon these assumptions by having the ability to model streamlines in the downwind wake cavity and by employing an enhanced numerical simulation of the plume mass, buoyant energy, and momentum. As a result the plume is modeled throughout the cavity, near-wake, and far-wake regions and the source-structure relationship is more accurately represented.

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[51] 61 FR 21,506, April 21, 2000.

[52] Letter from Mr. R. Douglas Neeley (U.S. EPA Region 4) to Mr. A. A. Linero (Florida Department of Environmental Protection) dated November 4, 1999, pursuant to Section 3.2 of 40 CFR Part 51, Appendix W.

[53] *See*, for example, Paine, R.J. and F. Lew, *Consequence Analysis for ISC-PRIME* (Acton, MA, Report TR-2460026: 1997) or Schulman, L.L., D.G. Strimaitis, and J.S. Scire, *Development and Evaluation of the PRIME Plume Rise and Building Downwash Model* (Phoenix, AZ, Paper No. 4B.1: 1997).

Figure E-2 in Appendix E shows the location of all buildings and stacks associated with the project that are considered in the downwash analysis. The existing WESP exhaust stack (PS01) and the new Dryer RTO stack (S201), from which a significant fraction of facility-wide emissions emanate, lie within wake region (from 53 meters to 178 meters downwind) of the main plant building at approximately 85 meters and 158 meters from the building. This distance is equivalent to 4.9*L* and 9.2*L* or 4.9 times and 9.2 times the height of the main building, respectively. Because the separation distance is less than 5*L* for the existing WESP, the ISCST3 model would apply building downwash assuming the stack were located directly adjacent to the building, when in fact there is nearly the maximum separation distance at which downwash is considered in the model. A distance greater than 5*L* separates the new Dryer RTO stack, such that the model presumes there is no downwash effect for emissions from this source. The remaining emission points, many of which are baghouses with unfavorable dispersion characteristics, are located adjacent to the main production building where the downwash effect is important. Figures 1 and 2 depict the three dimensional view of the Cordele OSB Mill from two vantage points to illustrate the relationships of the stacks and structures. The existing and new stacks with the majority of emissions are denoted in these figures.

Table 5 at the end of this discussion summarizes the output from the BPIP-PRIME program, which computes the downwind (XBADJ) and lateral (YBADJ) displacement of each source from the windward midpoint of the dominant building tier. Whereas ISCST3 considers the building downwash effects only as a function of the building height and width, ISC-PRIME also considers the building length and XBADJ and YBADJ to compute downwash effects. This formulation is a significant difference between the two models' representation of downwash effects, especially for facilities such as the Cordele OSB Mill where several stacks are considerably displaced from buildings.

FIGURE 1. THREE-DIMENSIONAL VIEW OF THE CORDELE OSB MILL FROM THE SOUTHEAST

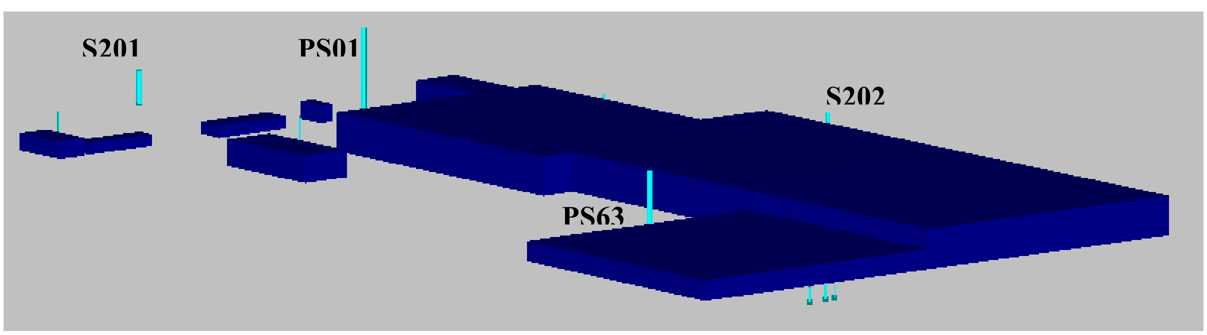
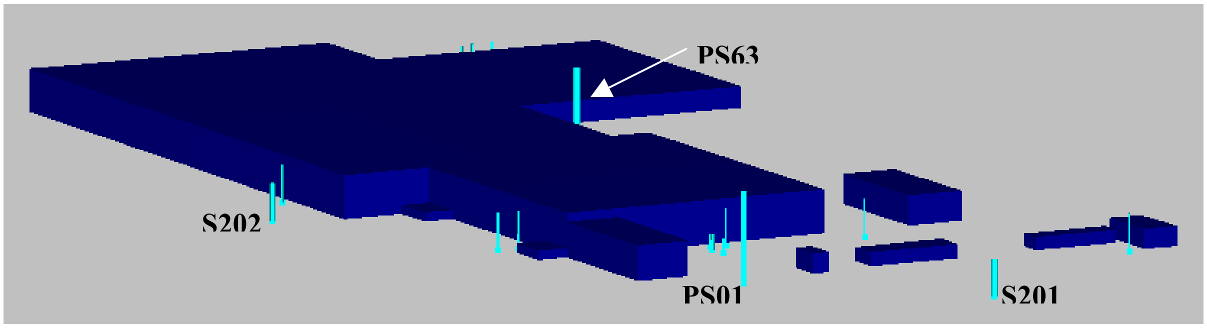


FIGURE 2. THREE-DIMENSIONAL VIEW OF THE CORDELE OSB MILL FROM THE NORTHWEST



For the PSD modeling analyses, the direction-specific building dimensions used as input to the ISC-PRIME model were calculated using the *BREEZE®-AIR* software, developed by Trinity Consultants. This software incorporates the algorithms of the U.S. EPA-sanctioned Building Profile Input Program (BPIP) (version 95086), which has been adapted to incorporate the PRIME downwash algorithms and released by the U.S. EPA as "BPIPPRM". BPIPPRM is designed to incorporate the concepts and procedures expressed in the GEP Technical Support document, the Building Downwash Guidance document, and other related documents,[54] while incorporating the enhancements to improve prediction of ambient impacts in building cavities and wake regions. Comparison studies have shown that ISC-PRIME induces no biases to over- or under-predict ambient concentrations outside of the wake and cavity regions when downwash is not important.

COMPARATIVE ANALYSES

Two comparison analyses were prepared to demonstrate the differences in the predicted ambient impacts by ISC-PRIME and ISCST3. The first analysis shows the magnitude by which ISCST3 predicts higher impacts compared to ISC-PRIME. The second analysis demonstrates that when downwash is disabled from the model, ISCST3 and ISC-PRIME each predict an identical ambient impact in magnitude and location. New runs were prepared to model the proposed configuration of the facility with an arbitrary emission rate (one gram per second) emitted from each stack to compare ISC-PRIME and ISCST3. ***Note that this emission rate is not associated with actual emissions of any pollutant from the Cordele OSB Mill, but was chosen only to demonstrate the comparative impacts.*** Comparative analyses were performed for the five-year meteorological data set used in the PSD analyses (i.e., Macon/Waycross 1984-1988).

Tables 1 and 2 present the results of the comparative analyses for a short-term averaging period (24-hours) and a long-term averaging period (annual). The first comparative analysis demonstrates that ISC-PRIME predicts lower impacts than ISCST3 as a result of the ISC-PRIME downwash algorithms correctly accounting for the plume rise effects. For the 24-hour averaging period, the overall

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[54] U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, *Guidelines for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) (Revised),* Research Triangle Park, North Carolina, EPA 450/4-80-023R, June 1985.

maximum impact from all sources predicted by ISC-PRIME was an average of 58% of the overall maximum impact predicted by ISCST3. For the annual averaging period, the overall maximum impact from all sources predicted by ISC-PRIME was an average of 72% of the overall maximum impact predicted by ISCST3. The location of the peak impacts is nearly the same in all cases, suggesting that the difference in magnitude of the peak impact is due solely to the over-representation of the building downwash effects for sources that are displaced from the building. The sources are represented with the separation distance in ISC-PRIME, whereas they are assumed to be immediately adjacent to the building in ISCST3.

TABLE 1. COMPARATIVE ANALYSIS RESULTS WITH DOWNWASH ENABLED
24-HOUR AVERAGING PERIOD

Model Setting	Averaging Period	Met Year	UTM East (km)	UTM North (km)	ISC-PRIME ($\mu g/m^3$)	UTM East (km)	UTM North (km)	ISCST3 ($\mu g/m^3$)	ISC-PRIME/ ISCST3
Downwash Enabled	24-hour	1984	235.600	3,539.500	257.6	235.600	3,539.500	462.1	0.56
		1985	235.700	3,539.500	305.6	235.700	3,539.500	492.1	0.62
		1986	235.700	3,539.500	264.2	235.700	3,539.500	444.8	0.59
		1987	235.700	3,539.500	267.2	235.600	3,539.500	410.2	0.65
		1988	235.700	3,539.500	333.7	235.600	3,539.500	648.3	0.51
		Maximum	235.700	3,539.500	333.7	235.600	3,539.500	648.3	0.51

TABLE 2. COMPARATIVE ANALYSIS RESULTS WITH DOWNWASH ENABLED
ANNUAL AVERAGING PERIOD

Model Setting	Averaging Period	Met Year	UTM East (km)	UTM North (km)	ISC-PRIME ($\mu g/m^3$)	UTM East (km)	UTM North (km)	ISCST3 ($\mu g/m^3$)	ISC-PRIME/ ISCST3
Downwash Enabled	Annual	1984	235.700	3,539.500	47.5	235.700	3,539.500	65.4	0.73
		1985	235.700	3,539.500	50.2	235.700	3,539.500	71.0	0.71
		1986	235.700	3,539.500	57.4	235.700	3,539.500	80.1	0.72
		1987	235.700	3,539.500	57.6	235.700	3,539.500	79.5	0.72
		1988	235.700	3,539.500	50.5	235.700	3,539.500	70.5	0.72
		Maximum	235.700	3,539.500	57.6	235.700	3,539.500	80.1	0.72

The second comparative analysis demonstrates that the two models predict the same ambient impacts when downwash is disabled from the models. These results, summarized in Tables 3 and 4, were obtained by simply removing the downwash data block from the ISCST3 and ISC-PRIME input files. This analysis demonstrates that differences between ISC-PRIME and ISCST3 are limited to improvements in the downwash algorithms and buoyant plume rise simulation and the models otherwise perform identically.

TABLE 3. COMPARATIVE ANALYSIS RESULTS WITH DOWNWASH DISABLED
24-HOUR AVERAGING PERIOD

Model Setting	Averaging Period	Met Year	UTM East (km)	UTM North (km)	ISC-PRIME ($\mu g/m^3$)	UTM East (km)	UTM North (km)	ISCST3 ($\mu g/m^3$)	ISC-PRIME/ ISCST3
Downwash Disabled	24-hour	1984	235.700	3,539.500	283.4	235.700	3,539.500	283.5	1.00
		1985	235.700	3,539.500	332.1	235.700	3,539.500	331.9	1.00
		1986	235.900	3,539.400	279.5	235.900	3,539.400	279.5	1.00
		1987	235.700	3,539.500	305.1	235.700	3,539.500	305.3	1.00
		1988	235.900	3,539.300	332.1	235.900	3,539.300	332.1	1.00
		Maximum	235.700	3,539.500	332.1	235.700	3,539.500	332.1	1.00

TABLE 4. COMPARATIVE ANALYSIS RESULTS WITH DOWNWASH DISABLED
ANNUAL AVERAGING PERIOD

Model Setting	Averaging Period	Met Year	UTM East (km)	UTM North (km)	ISC-PRIME ($\mu g/m^3$)	UTM East (km)	UTM North (km)	ISCST3 ($\mu g/m^3$)	ISC-PRIME/ ISCST3
Downwash Disabled	Annual	1984	235.700	3,539.500	48.7	235.700	3,539.500	48.7	1.00
		1985	235.700	3,539.500	52.2	235.700	3,539.500	52.2	1.00
		1986	235.700	3,539.500	57.2	235.700	3,539.500	57.2	1.00
		1987	235.700	3,539.500	58.1	235.700	3,539.500	58.1	1.00
		1988	235.700	3,539.500	49.6	235.700	3,539.500	49.6	1.00
		Maximum	235.700	3,539.500	58.1	235.700	3,539.500	58.1	1.00

The preceding comparative analysis demonstrates that the improved representation of building downwash warrants the use of the ISC-PRIME in favor of ISCST3 to predict ambient pollutant impacts attributable to the facility. Included on the CD-ROM enclosed with this permit application are the input and output files from the building downwash analysis and the preceding comparative analyses.

TABLE 5. SUMMARY OF DOWNWIND (XBADJ) AND LATERAL (YBADJ) STACK DISPLACEMENTS EVALUATED IN THE ISC-PRIME MODEL

Source	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)
PS01	10	-43.17	-8.24	130	0.00	0.00	250	-87.31	13.49
	20	0.00	0.00	140	0.00	0.00	260	-463.57	142.62
	30	0.00	0.00	150	0.00	0.00	270	-483.75	96.77
	40	0.00	0.00	160	0.00	0.00	280	-489.23	38.34
	50	23.07	-32.09	170	0.00	0.00	290	-485.43	-9.66
	60	24.92	-23.14	180	0.00	0.00	300	-485.13	-58.75
	70	26.01	-13.49	190	0.00	0.00	310	-470.09	-106.06
	80	26.32	-3.43	200	0.00	0.00	320	-440.77	-150.14
	90	25.82	6.74	210	0.00	0.00	330	-398.06	-189.66
	100	24.54	16.70	220	0.00	0.00	340	0.00	0.00
	110	0.00	0.00	230	-74.34	32.09	350	-45.70	5.62
	120	0.00	0.00	240	-82.07	23.14	360	-45.12	-1.33
PS03	10	-91.58	-213.16	130	-11.86	100.62	250	-387.04	120.65
	20	0.00	0.00	140	-21.88	131.75	260	-411.13	88.57
	30	-52.68	-204.36	150	-31.23	158.87	270	-422.72	52.65
	40	-47.66	-191.56	160	-39.63	181.16	280	-421.47	5.49
	50	-41.18	-172.93	170	-46.83	197.95	290	-412.99	-30.24
	60	-33.46	-149.05	180	-54.91	208.73	300	-410.22	-66.44
	70	-24.72	-120.65	190	-80.60	213.16	310	-394.98	-100.62
	80	-15.23	-88.57	200	-59.45	-20.28	320	-367.75	-131.75
	90	-5.27	-52.65	210	-185.57	204.36	330	-329.34	-158.87
	100	4.85	-5.49	220	-248.91	191.56	340	-280.92	-181.16
	110	8.93	30.24	230	-304.68	172.93	350	-223.97	-197.95
	120	-1.49	66.44	240	-351.20	149.05	360	-160.21	-208.73
PS04	10	0.00	0.00	130	-3.40	104.09	250	-394.28	126.24
	20	0.00	0.00	140	-14.15	136.63	260	-419.22	92.82
	30	-50.74	-213.30	150	-24.47	165.02	270	-431.43	55.43
	40	-44.19	-200.02	160	-34.04	188.40	280	-430.53	6.72
	50	-36.30	-180.66	170	-42.58	206.05	290	-422.12	-30.61
	60	-27.31	-155.82	180	-52.13	217.44	300	-419.15	-68.39
	70	-17.48	-126.24	190	-63.47	-3.00	310	-403.44	-104.09
	80	-7.13	-92.82	200	-59.81	-11.15	320	-375.47	-136.63
	90	3.44	-55.43	210	-187.52	213.30	330	-336.10	-165.02
	100	13.91	-6.72	220	-252.38	200.02	340	-286.51	-188.40
	110	18.07	30.61	230	-309.57	180.66	350	-228.22	-206.05
	120	7.44	68.39	240	-357.35	155.82	360	-162.99	-217.44
PS10	10	-89.94	-208.85	130	-16.42	99.89	250	-384.13	117.06
	20	-55.23	-206.43	140	-26.24	130.24	260	-407.64	85.55
	30	-52.61	-199.75	150	-35.26	156.62	270	-418.76	50.28
	40	-48.39	-187.00	160	-43.21	178.25	280	-417.16	3.85
	50	-42.69	-168.57	170	-49.85	194.46	290	-408.46	-31.12
	60	-35.70	-145.02	180	-57.28	204.77	300	-405.60	-66.52
	70	-27.63	-117.06	190	-82.25	208.85	310	-390.42	-99.89
	80	-18.71	-85.55	200	-117.47	206.43	320	-363.38	-130.24
	90	-9.23	-50.28	210	-185.64	199.75	330	-325.30	-156.62
	100	0.53	-3.85	220	-248.18	187.00	340	-277.34	-178.25
	110	4.40	31.12	230	-303.17	168.57	350	-220.95	-194.46
	120	-6.10	66.52	240	-348.95	145.02	360	-157.84	-204.77
PS11	10	0.00	0.00	130	-177.94	-8.99	250	-32.47	-78.48
	20	0.00	0.00	140	-179.47	-25.54	260	-16.26	-67.54
	30	0.00	0.00	150	-175.54	-41.31	270	0.44	-54.54
	40	0.00	0.00	160	-166.28	-55.82	280	17.13	-39.89
	50	0.00	0.00	170	-151.96	-68.65	290	0.00	0.00
	60	-130.30	87.03	180	-133.03	-79.38	300	0.00	0.00
	70	-144.12	78.48	190	0.00	0.00	310	14.13	8.99
	80	-153.55	67.54	200	0.00	0.00	320	6.43	25.54
	90	-158.32	54.54	210	0.00	0.00	330	-1.47	41.31
	100	-158.28	39.89	220	0.00	0.00	340	-9.32	55.82
	110	-158.88	24.42	230	0.00	0.00	350	-16.89	68.65
	120	-171.01	7.83	240	-47.69	-87.03	360	-23.94	79.38

TABLE 5. SUMMARY OF DOWNWIND (XBADJ) AND LATERAL (YBADJ) STACK DISPLACEMENTS EVALUATED IN THE ISC-PRIME MODEL

Source	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)
PS12	10	0.00	0.00	130	-463.09	38.05	250	-23.99	-67.07
	20	0.00	0.00	140	-455.38	-8.23	260	-9.89	-54.83
	30	0.00	0.00	150	-433.84	-54.26	270	4.51	-40.92
	40	0.00	0.00	160	-399.12	-98.64	280	0.00	0.00
	50	-124.40	85.13	170	-352.26	-140.02	290	0.00	0.00
	60	-140.64	77.27	180	-297.02	-177.16	300	0.00	0.00
	70	-152.60	67.07	190	-252.02	-208.90	310	8.49	22.04
	80	-159.92	54.83	200	0.00	0.00	320	-1.39	37.41
	90	-162.39	40.92	210	0.00	0.00	330	-11.23	51.64
	100	-159.92	25.77	220	0.00	0.00	340	-20.72	64.31
	110	-158.05	10.23	230	-49.59	-85.13	350	-29.59	75.02
	120	-456.73	83.18	240	-37.35	-77.27	360	0.00	0.00
PS13	10	0.00	0.00	130	-465.02	42.69	250	-27.03	-71.06
	20	0.00	0.00	140	-458.09	-4.00	260	-12.20	-59.29
	30	0.00	0.00	150	-437.24	-50.56	270	3.01	-45.71
	40	0.00	0.00	160	-403.10	-95.59	280	0.00	0.00
	50	-120.18	87.83	170	-356.72	-137.72	290	0.00	0.00
	60	-136.94	80.67	180	-301.81	-175.66	300	0.00	0.00
	70	-149.55	71.06	190	-257.00	-208.26	310	10.42	17.40
	80	-157.62	59.29	200	0.00	0.00	320	1.32	33.18
	90	-160.89	45.71	210	0.00	0.00	330	-7.83	47.95
	100	-159.28	30.75	220	0.00	0.00	340	-16.74	61.26
	110	-158.28	15.24	230	-53.82	-87.83	350	-25.14	72.71
	120	-457.82	88.08	240	-41.05	-80.67	360	-32.77	81.95
PS63	10	17.01	36.19	130	-282.10	70.00	250	-225.40	-98.07
	20	7.54	53.45	140	-282.69	54.66	260	-213.96	-98.75
	30	-35.92	67.08	150	-274.69	37.66	270	-196.02	-97.59
	40	-78.29	78.68	160	-258.34	19.52	280	-153.94	37.06
	50	-118.27	87.88	170	-234.15	0.78	290	-148.57	-93.89
	60	-154.67	94.41	180	-205.15	-17.98	300	-138.77	-83.21
	70	-186.36	98.07	190	-189.19	-36.19	310	-124.75	-70.00
	80	-212.39	98.75	200	-180.24	-53.45	320	-106.94	-54.66
	90	-231.97	97.59	210	-202.33	-67.08	330	-85.87	-37.66
	100	12.79	-37.06	220	-218.28	-78.68	340	-62.20	-19.52
	110	-255.48	93.89	230	-227.59	-87.88	350	-36.64	-0.78
	120	-272.94	83.21	240	-229.99	-94.41	360	-9.97	17.98
S201	10	0.00	0.00	130	0.00	0.00	250	0.00	0.00
	20	0.00	0.00	140	0.00	0.00	260	0.00	0.00
	30	0.00	0.00	150	0.00	0.00	270	0.00	0.00
	40	0.00	0.00	160	0.00	0.00	280	0.00	0.00
	50	0.00	0.00	170	0.00	0.00	290	0.00	0.00
	60	0.00	0.00	180	0.00	0.00	300	0.00	0.00
	70	0.00	0.00	190	0.00	0.00	310	0.00	0.00
	80	0.00	0.00	200	0.00	0.00	320	0.00	0.00
	90	0.00	0.00	210	0.00	0.00	330	0.00	0.00
	100	0.00	0.00	220	0.00	0.00	340	0.00	0.00
	110	0.00	0.00	230	0.00	0.00	350	0.00	0.00
	120	0.00	0.00	240	0.00	0.00	360	0.00	0.00
S202	10	-197.57	-58.75	130	-92.60	-68.37	250	-200.33	135.22
	20	-187.29	-77.30	140	-72.04	-48.69	260	-229.78	135.35
	30	-205.09	-95.51	150	-49.29	-27.54	270	0.00	0.00
	40	-216.65	-110.83	160	-25.05	-5.55	280	0.00	0.00
	50	-221.63	-122.77	170	-0.05	16.60	290	0.00	0.00
	60	-219.87	-130.99	180	22.65	38.26	300	-301.37	85.96
	70	-211.43	-135.22	190	25.38	58.75	310	-314.25	68.37
	80	-196.57	-135.35	200	14.59	77.30	320	-317.58	48.69
	90	0.00	0.00	210	-33.17	95.51	330	-311.27	27.54
	100	0.00	0.00	220	-79.92	110.83	340	-295.50	5.55
	110	0.00	0.00	230	-124.24	122.77	350	-270.75	-16.60
	120	-110.34	-85.96	240	-164.79	130.99	360	-237.77	-38.26

Table 5. Summary of Downwind (XBADJ) and Lateral (YBADJ) Stack Displacements Evaluated in the ISC-PRIME Model

Source	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)
S203	10	-162.23	-165.59	130	-17.74	15.66	250	-310.53	158.04
	20	-133.94	-176.38	140	-12.91	47.06	260	-342.27	138.68
	30	-135.33	-183.83	150	-7.69	77.02	270	-363.61	113.96
	40	-132.62	-185.69	160	-2.23	104.65	280	-373.90	76.13
	50	-125.87	-181.90	170	3.29	129.09	290	-378.41	47.59
	60	-115.30	-172.60	180	6.40	149.62	300	-389.68	16.21
	70	-101.23	-158.04	190	-9.96	165.59	310	-389.11	-15.66
	80	-84.08	-138.68	200	-38.77	176.38	320	-376.72	-47.06
	90	-64.38	-113.96	210	-102.92	183.83	330	-352.88	-77.02
	100	-42.72	-76.14	220	-163.95	185.69	340	-318.31	-104.65
	110	-25.64	-47.59	230	-219.99	181.90	350	-274.08	-129.09
	120	-22.02	-16.21	240	-269.35	172.59	360	-221.52	-149.62
S204	10	-153.14	-166.88	130	-21.16	24.18	250	-316.19	150.81
	20	-124.76	-176.08	140	-17.76	54.85	260	-346.59	130.58
	30	-126.35	-181.93	150	-13.82	83.86	270	-366.46	105.23
	40	-124.10	-182.26	160	-9.46	110.31	280	-375.19	67.04
	50	-118.08	-177.05	170	-4.81	133.42	290	-378.10	38.41
	60	-108.47	-166.46	180	-2.33	152.47	300	-387.78	7.22
	70	-95.57	-150.81	190	-19.05	166.88	310	-385.68	-24.18
	80	-79.76	-130.58	200	-47.94	176.08	320	-371.86	-54.85
	90	-61.53	-105.23	210	-111.90	181.93	330	-346.74	-83.86
	100	-41.43	-67.04	220	-172.46	182.26	340	-311.09	-110.31
	110	-25.95	-38.41	230	-227.78	177.05	350	-265.98	-133.42
	120	-23.92	-7.22	240	-276.18	166.46	360	-212.79	-152.47
S205	10	-170.84	-26.36	130	-134.01	-61.41	250	-185.65	95.88
	20	-166.59	-40.76	140	-114.03	-49.03	260	-208.49	99.15
	30	-191.04	-55.94	150	-90.59	-35.17	270	-225.00	98.26
	40	-209.69	-69.41	160	-64.39	-20.23	280	-234.67	84.74
	50	-221.96	-80.78	170	-36.24	-4.69	290	-242.79	80.24
	60	-227.49	-89.69	180	-9.30	11.01	300	-261.79	71.92
	70	-226.11	-95.88	190	-1.35	26.36	310	-272.84	61.41
	80	-217.86	-99.15	200	-6.11	40.76	320	-275.59	49.03
	90	-202.99	-98.26	210	-47.21	55.94	330	-269.98	35.17
	100	-181.95	-84.74	220	-86.88	69.41	340	-256.15	20.23
	110	-161.26	-80.24	230	-123.90	80.78	350	-234.55	4.69
	120	-149.91	-71.92	240	-157.16	89.69	360	-205.82	-11.01
S206	10	-25.31	-13.08	130	3.97	-8.04	250	-41.58	3.36
	20	-22.21	-16.04	140	4.99	-4.49	260	-39.49	-1.37
	30	-21.58	-18.18	150	5.85	-0.80	270	-36.21	-6.05
	40	-20.29	-19.77	160	6.53	2.91	280	-31.83	-10.55
	50	6.29	-12.37	170	7.02	6.53	290	-28.59	-14.78
	60	9.33	-7.99	180	7.29	9.96	300	-33.53	11.34
	70	-12.99	-10.47	190	7.34	13.08	310	-35.58	8.04
	80	-9.65	-6.46	200	6.40	16.04	320	-36.54	4.49
	90	-6.02	-2.25	210	1.11	18.18	330	-36.40	0.80
	100	-2.21	2.02	220	-4.22	19.77	340	-35.15	-2.91
	110	1.62	5.46	230	-41.93	12.37	350	-32.83	-6.53
	120	2.84	-11.34	240	-42.40	7.99	360	-29.52	-9.96
S207	10	0.00	0.00	130	23.01	-20.28	250	-429.40	68.01
	20	11.44	-209.57	140	0.00	0.00	260	-443.70	29.38
	30	13.60	-191.27	150	0.00	0.00	270	-444.52	-11.30
	40	15.34	-167.15	160	0.00	0.00	280	-431.83	-61.27
	50	16.62	-137.96	170	0.00	0.00	290	0.00	0.00
	60	17.40	-104.57	180	0.00	0.00	300	0.00	0.00
	70	17.64	-68.01	190	0.00	0.00	310	-84.27	20.28
	80	17.35	-29.38	200	-184.14	209.57	320	-86.51	10.64
	90	16.53	11.30	210	-251.85	191.27	330	-86.13	0.68
	100	15.21	61.27	220	-311.91	167.15	340	-83.14	-9.30
	110	0.00	0.00	230	-362.49	137.96	350	-77.61	-19.00
	120	0.00	0.00	240	-402.05	104.57	360	-69.73	-28.13

TABLE 5. SUMMARY OF DOWNWIND (XBADJ) AND LATERAL (YBADJ) STACK DISPLACEMENTS EVALUATED IN THE ISC-PRIME MODEL

Source	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)	Flow Vector	XBADJ (m)	YBADJ (m)
S208	10	-82.88	-210.04	130	-18.91	106.60	250	-388.69	111.55
	20	-48.08	-206.38	140	-29.86	136.41	260	-411.17	79.33
	30	-45.57	-198.46	150	-39.90	162.07	270	-421.16	43.54
	40	-41.68	-184.51	160	-48.72	182.81	280	-418.35	-3.21
	50	-36.52	-164.95	170	-56.07	198.00	290	-408.41	-38.27
	60	-30.25	-140.38	180	-64.02	207.17	300	-404.31	-73.55
	70	-23.07	-111.55	190	-89.30	210.04	310	-387.93	-106.60
	80	-15.18	-79.33	200	-124.62	206.38	320	-359.76	-136.41
	90	-6.83	-43.54	210	-192.68	198.46	330	-320.67	-162.07
	100	1.73	3.21	220	-254.88	184.51	340	-271.83	-182.81
	110	4.35	38.27	230	-309.34	164.95	350	-214.72	-198.00
	120	-7.39	73.55	240	-354.40	140.38	360	-151.10	-207.17

ELECTRONIC MODELING FILES ON CD-ROM

CO Significance

CS08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

NO_X Significance

NS08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

PM_{10} Significance

PS08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

NO_X NAAQS

NN08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

PM_{10} NAAQS

PN08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File
.max = ISC-PRIME MAXI file for exceedance events

NO_X PSD Increment

NI08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

PM_{10} PSD Increment

PI08YY.TYP

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

Air Toxics

XS08YY.TYP

X = Pollutant
F = Formaldehyde
M = Methanol
L = Phenol

YY = Year
84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988

TYP = File Type
.dat = ISC-PRIME Input File
.lst = ISC-PRIME Output File

VISCREEN

GAVETWIND.out	Wind Frequency/Stability Summary
GAVETVISC.out	VISCREEN Output

🗁 Meteorological Data

MCNWAYYY.ASC	**YY = Year**
	84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988
	Macon/Waycross

🗁 PRIME Downwash

PRIMEDW.TYP	**TYP = File Type**
	.bpi = BPIP Input File
	.bpo = BPIP Output File
	.ep1 = EPA File
	.wak = Wake File

🗁 ISCST3 - ISC-PRIME Comparison

PR08YYR.TYP	**YY = Year**
	84 = 1984, 85 = 1985, 86 = 1986, 87 = 1987, 88 = 1988
	R = Model Run
	A = ISC-PRIME with downwash
	B = ISCST3 with downwash
	C = ISC-PRIME without downwash
	D = ISCST3 without downwash
	TYP = File Type
	.dat = Input File
	.lst = Output File