

**Prevention of Significant Air Quality Deterioration Review
Of Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill
Located in Floyd County, Georgia**

**PRELIMINARY DETERMINATION
SIP Permit Application No. 14756
July 2004**

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

Stationary Source Permitting Program (SSPP)
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SUMMARY

The Environmental Protection Division (EPD) has reviewed the Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill application for a permit for the construction and operation of modifications at their facility in Rome, Georgia (Floyd County). The project involves the completion of modifications necessary to reduce the mill's energy costs, improve reliability of the mill boilers, and increase the mill's production to 2,600 machine-dried tons per day (MDTPD) of linerboard.

The proposed project includes the permanent shutdown of Power Boilers 1, 2, and 3, Lime Kiln 3A, Recovery Furnace 4, Smelt Dissolving Tanks 3 and 4, and the H-washer. The facility will also convert existing Recovery Furnace 3 to Waste Fuel Boiler WF and install fuel oil load bearing guns on Recovery Furnace 5 and Package Boiler 2. The mill also plans to make modifications to the Recovery Furnace 5 combustion air and black liquor supply system in order to increase the firing rate of the unit to 5.3 million pounds of black liquor solids (BLS) per day. The mill also plans several modifications to Power Boiler 4 including the replacement of the steam generating bank, other steam tube system replacements, and the upgrade of the burners on the unit to low NO_x burners. Finally, small modifications (the replacement of the primary headbox on Linerboard Machine P2 and the inlet piping to the Linerboard Machine P1 primary headbox) are planned for the paper machines in order to improve their performance. A steam saving project is also planned for the F Evaporator set.

Proposed Waste Fuel Boiler WF (converted to Recovery Furnace 3) is designed to combust wood residue, waste wood, No. 2 fuel oil, used oil, tire derived fuel, wastewater sludge, recycle fiber waste, HVLC NCGs, and recovered boiler ash and will be rated at 856 MMBtu per hour. The facility will use a dry plate electrostatic precipitator to control emissions from this source. Inland will be installing and operating continuous emissions monitoring systems (CEMS) for CO, SO₂, and NO_x and a continuous opacity monitoring system (COMS) as part of this project.

Recovery Furnace 5 is designed to process black liquor and combust low sulfur fuel oil. New load bearing guns will allow the facility to operate the unit at a capacity of 850 MMBtu per hour in order to supply sufficient process steam when needed. Black liquor solids capacity will be 1325 MMBtu per hour. The facility is required to install and operate a furnace oxygen monitor for this unit.

Package Boiler 2 is currently permitted to burn only natural gas and to operate in a backup capacity to the Power Boilers and Recovery Furnaces. Inland has proposed that the unit become a full time steam source and, as a result, it is necessary to install load bearing oil guns. The unit will have a capacity of 192 MMBtu per hour when firing oil. Inland will be required to install and operate a COMS and a furnace oxygen monitor for this unit.

Power Boiler 4 is currently permitted to burn coal and No. 5 fuel oil. Following the proposed modification the unit will burn only low sulfur coal and low sulfur fuel oil. Inland will install and operate a CEMS for NO_x and a furnace oxygen monitor as a result of this project.

The Rome Linerboard Mill is located in Floyd County, which is classified as "attainment" or "unclassifiable" for SO₂, PM₁₀, NO_x, CO, and ozone (VOC) in accordance with Section 107 of the Clean Air Act, as amended August 1977.

The EPD review of the data submitted by Inland related to the proposed modifications indicates that the project will be in compliance with all applicable state and federal air quality regulations.

It is the preliminary determination of the EPD that the proposal provides for the application of Best Available Control Technology (BACT) for the control of PM₁₀, CO, VOC, TRS, and H₂S, as required by federal Prevention of Significant Deterioration (PSD) regulation 40 CFR 52.21(j).

It has been determined through approved modeling techniques that the estimated emissions will not cause or contribute to a violation of any ambient air standard or allowable PSD increment, either in the area surrounding the facility or the nearby Class I area. It has further been determined that the proposal will not cause impairment of visibility or detrimental effects on soils or vegetation. Any air quality impacts produced by project-related growth will be inconsequential.

This Preliminary Determination concludes that an Air Quality Permit be issued to Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill for the requested modifications. Various conditions have been incorporated into the current Title V operating permit to ensure and confirm compliance with all applicable air quality regulations. A copy of the draft permit amendment is included in Appendix A.

1.0 INTRODUCTION

On October 6, 2003, Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill (Inland) submitted an application for an air quality permit for modifications to several units at the plant. The facility is located at 238 Mays Bridge Road, Rome (Floyd County), Georgia. The application was updated in April 2004 as a result of a detailed engineering analysis. The project involves the completion of the modifications necessary to reduce the mill's energy costs, improve reliability of the mill boilers, and increase the mill's production to 2,600 machine-dried tons per day (MDTPD) of linerboard.

The Inland mill is currently classified as a "major" source under the PSD definition of major source because it has the potential to emit more than 100 tpy of regulated air pollutants and is one of the listed 28 source categories. Thus, the project is subject to a PSD review for those pollutants whose emissions will increase above the corresponding PSD Significant Levels.

PSD regulations require that emission increases be calculated based on the difference between past actual emissions (in this case, the average for the two year period from 2001-2002) and the potential-to-emit at the maximum mill capacity of 2,600 MDTPD. The estimated incremental increases of regulated pollutants from the mill are listed in Table 1.

Table 1: Emissions Increases from the Project

Pollutant	Potential Emissions Increase / (Decrease)	PSD Significant Levels	Subject to PSD Review
	tpy	tpy	
PM ₁₀	288	15	Yes
PM	288	25	Yes
SO ₂	39.0	40	No
NO _x	(119)	40	No
CO	643	100	Yes
VOC	864	40	Yes
TRS	84	10	Yes
H ₂ S	23	10	Yes
Pb	0.123	0.6	No
H ₂ SO ₄	0.72	7.0	No
Be	(2.08 x 10 ⁻⁴)	4.00 x 10 ⁻⁴	No
Hg	7.35 x 10 ⁻³	0.10	No

The net increases were calculated by subtracting the past actual emissions (based upon the annual average emissions from 2001 and 2002) from the future potential emissions. The emissions calculations for proposed modifications can be found in detail in the facility's PSD submittal (see Appendix A of Application No. 14756). These calculations have been reviewed and approved by the Division.

Based on the information in Table 1, Inland's proposed modification, as specified per Georgia Air Quality Permit Application No. 14756, is classified as a major modification under PSD because the potential emissions increases of PM/PM₁₀, CO, VOC, TRS, and H₂S exceed the PSD significant levels.

Through its new source review (NSR) procedure, EPD has evaluated Inland's proposal for compliance with State and Federal requirements. The findings of EPD have been assembled in this Preliminary Determination.

2.0 PROCESS DESCRIPTION

On October 6, 2003, Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill (Inland) submitted an application for an air quality permit for modifications to several units at the plant. The application was updated in April 2004 based on a detailed engineering analysis. The facility is located at 238 Mays Bridge Road, Rome (Floyd County), Georgia. The goal of the project is to provide the mill with a more reliable source of steam and to reduce operating costs. When the project is complete, the mill's maximum production capacity on an annual basis is expected to be 2,600 MDTPD of linerboard. To meet this production, the paper machine will be fed a combination of recycle and virgin fiber. The maximum virgin production capacity for the mill is expected to be 2,500 air-dried tons per day (ADTPD) and the maximum production capacity of the recycle fiber plant will be 650 oven dried tons per day (ODTPD).

Currently, heavy black liquor is burned in three recovery furnaces. The organic portion of the heavy black liquor burns and generates steam for use in the mill. The inorganic chemical component, which consists mostly of sodium carbonate and sodium sulfide, is recovered as smelt from the bottom of the furnace. The most significant change in the recovery system will be the decommissioning of Recovery Furnace 4 and the conversion of Recovery Furnace 3 to a Waste Fuel Boiler. With these changes the mill will operate a single recovery furnace (No. 5). The mill will need to modify Recovery Furnace 5 to handle a slightly higher liquor feed rate in order to continue operating the mill at current virgin pulp production levels. With these modifications the production capacity of Recovery Furnace 5 will be 5.3 million pounds of black liquor solids per day (mmlbBLS/day). The final design changes are expected to include the following:

- Combustion air modification which may include increased size of secondary and tertiary air fans and a new tertiary air fan for controllability;
- Modification of the superheater section to reduce pressure drop and heat flux;
- Upgrade of fuel oil delivery system;
- Upgrade of black liquor delivery system;
- Potential upgrade of the Smelt Tank 5 scrubber system;
- Combustion air modifications which may include modifications to the size, numbers, and arrangement of secondary and tertiary air ports; and
- Installation of a larger cold air fan to supply secondary and tertiary air ports to improve control of furnace.

Recovery furnaces perform two functions: chemical recovery and steam generation. At times, the mill has insufficient black liquor to meet the mill's steam demands (primarily during extended startups or shutdowns). During these times the mill will fire very low sulfur fuel oil (< 0.5% sulfur fuel oil) in Recovery Furnace 5. The furnace currently has burners for the purpose of the startup of the unit and for steam generation, however the new burners will allow the unit to operate at full steam production on just fuel oil. The fuel oil burners have a firing rating of 850 MMBtu/hr.

The smelt from the recovery furnace combines with water in the smelt dissolving tank to form green liquor. With the proposed changes, the Smelt Tanks 3 and 4 will be decommissioned.

The proposed project also calls for the decommissioning of Lime Kiln 3A. The load currently carried by Lime Kiln 3A will be shifted to Lime Kilns 1A and 2A. The other equipment associated with Lime Kiln 3A (causticizing, slaking, and white liquor clarification) may continue to be utilized by the mill. The lime kilns are currently utilized to burn the low volume high concentration (LVHC) non-condensable gases (NCGs). These gases will continue to be combusted in Lime Kiln 1A or 2A.

The proposed project calls for the decommissioning of the Power Boilers 1, 2, and 3. In addition, Recovery Furnace 3 will be converted to a fluidized bed Waste Fuel Boiler. The waste fuel boiler will fire bark, wood waste, No. 2 fuel oil, used oil, waste water sludge, tire derived fuel (TDF), recycle fiber plant waste and ash, and will be rated at 856 MM Btu/hr. The mill may route the high volume low concentration (HVLC) NCGs, which are required to be collected by Phase II of the Cluster Rule (40 CFR 63 Subpart S), to the Waste Fuel Boiler. Alternatively, the mill may complete other modifications to achieve equivalent HAP emission reductions under the Clean Condensate Alternative provisions in 40 CFR 63 Subpart S. PM emissions from the Waste Fuel Boiler will be controlled through the use of the existing electrostatic precipitator (Source Code ESP3), which currently controls emissions from Recovery Furnace 3. A new cell and corresponding stack will be added to Source Code ESP3 in order to provide sufficient control of PM emissions.

The mill currently operates a natural gas fired package boiler (Package Boiler 2). The unit is currently used as a back-up boiler that operates only when one of the existing power boilers or recovery furnaces is not in operation. With the proposed changes, the mill will operate the unit as a base load boiler. In addition, the mill will be installing fuel oil firing capability in the Package Boiler in order to provide additional fuel firing flexibility. The unit will fire No. 2 fuel oil and used oil with a sulfur content less than 0.5% sulfur.

The project also calls for modifications to Power Boiler 4. The boiler is aging and requires the replacement of several steam tubes including the entire steam generating bank. These steam tube changes may allow for an increase in the unit's overall steam generating efficiency. In addition, the coal burners will be upgraded to low NO_x burners with a total heat input rating of 565 MMBtu/hr. Boiler management controls will also be upgraded.

Small modifications are planned for the paper machines in order to improve their performance. The modifications include the replacement of the inlet piping to the Linerboard Machine P1 primary headbox and the primary headbox on the Linerboard Machine P2.

A steam savings project will be completed for the F Evaporator Set. The project includes modifications to the flash tank and the addition of a heat exchanger. The plant will also re-pipe so the evaporator set can receive steam directly from a boiler rather than from the concentrator. The modifications are not being performed to increase liquor processing capacity.

3.0 REVIEW OF APPLICABLE RULES AND REGULATIONS

State Rules

Georgia Rule for Air Quality Control (Georgia Rule) 391-3-1-.03(1) requires that any person prior to beginning the construction or modification of any facility which may result in an increase in air pollution shall obtain a permit for the construction or modification of such facility from the Director upon a determination by the Director that the facility can reasonably be expected to comply with all the provisions of the Act and the rules and regulations promulgated thereunder. Georgia Rule 391-3-1-.03(8)(b) continues that no permit to construct a new stationary source or modify an existing stationary source shall be issued unless such proposed source meets all the requirements for review and for obtaining a permit prescribed in Title I, Part C of the Federal Act [i.e., Prevention of Significant Deterioration of Air Quality (PSD)], and Section 391-3-1-.02(7) of the Georgia Rules (i.e., PSD).

Georgia Rule (b) [391-3-1-.02(2)(b)] is a general rule that limits the opacity of emissions from any air contaminant source to less than 40%. Georgia Rule (b) applies to Recovery Furnace 5, Power Boiler 4, Package Boiler 2, and Waste Fuel Boiler WF. The 40% opacity limit is subsumed by more stringent opacity limits for Recovery Furnace 5, Package Boiler 2, and Waste Fuel Boiler WF under 40 CFR 60 Subpart BB, 40 CFR 60 Subpart Db, and 40 CFR 52.21. The opacity from all four boilers will be monitored using a COMS.

Georgia Rule (d) [391-3-1-.02(2)(d)] is a general rule that contains requirements for fuel burning equipment. Emissions that may be regulated under Georgia Rule (d) include PM, opacity, and NO_x.

Power Boiler 4 is subject to the rule for PM at a rate limited by equation $P = 0.7(10/R)^{0.202}$ where P is the emission limit in pounds per million Btu heat input and R is equal to the boiler heat input. The limit is subsumed by a more stringent PSD limit of 0.070 pounds per million Btu heat input. The facility controls PM emissions from this source using an ESP.

Package Boiler 2 is subject to the rule for PM and opacity. PM emissions are limited to a rate calculated by equation $P = 0.5(10/R)^{0.5}$ where P is the emission limit in pounds per million Btu heat input and R is equal to the boiler heat input. The PM limit is subsumed by a more stringent PSD limit of 0.050 pounds per million Btu heat input. Opacity is limited to less than 20% except for one six-minute period of no more than 27%. The facility does not operate a control device on this boiler. Compliance is achieved through burning only natural gas and very low sulfur fuel oil. Opacity will be monitored using a COMS.

Waste Fuel Boiler WF is subject to the rule for PM, NO_x, and opacity. PM emissions are limited to a rate calculated by equation $P = 0.5(10/R)^{0.5}$ where P is the emission limit in pounds per million Btu heat input and R is equal to the boiler heat input. The PM limit is subsumed by a more stringent PSD limit of 0.025 pounds per million Btu heat input. Opacity is limited to less than 20% except for one six minute period of no more than 27% and NO_x is limited to 0.20 pounds per million Btu heat input. Opacity for the Waste Fuel Boiler is subsumed by a more stringent PSD limit of 10%. The facility will control PM and opacity with an ESP. Opacity and NO_x emissions will be monitored using a COMS and a CEMS.

Georgia Rule (e) [391-3-1-.02(2)(e)], commonly known as the process weight rule, limits PM emissions based on the following equations:

$$\begin{aligned} \text{For } P = 30 \text{ ton/hr, } & E = 4.1 \times P^{0.67} \\ \text{For } P > 30 \text{ ton/hr, } & E = 55 \times P^{0.11} - 40 \end{aligned}$$

where E = emission rate (lb/hr) and P = process input rate (ton/hr). Recovery Furnace 5 is subject to Georgia Rule (e). Because the limit is based on the process input weight, the limit is not considered subsumed by any other PM limit.

Georgia Rule (g) [391-3-1-.02(2)(g)] applies to all fuel-burning sources. Paragraph 1 limits the emission of SO₂ from new fuel burning sources based on the type of fuel burned in the source. Paragraph 2 of the rule limits the percentage of sulfur, by weight, in the fossil fuel burned to 3.0 percent for fuel-burning sources with a maximum heat input equal to or greater than 100 MMBtu/hr. Paragraph 2 applies to Recovery Furnace 5, Power Boiler 4, Package Boiler 2, and Waste Fuel Boiler WF. The facility has taken more stringent PSD Avoidance and 40 CFR 60 Subpart Db limits for the burning of fuel oil and coal for all four units. Other fuel sources, such as tire-derived fuel, still must meet the sulfur content limit in this rule. Waste Fuel Boiler WF is subject to a limit of 0.80 pounds per million BTU heat input under Paragraph 1 of the rule.

Georgia Rule (gg) [391-3-1-.02(2)(gg)] applies to Kraft Pulp Mill sources. All limits under Rule (gg) are equivalent to or subsumed by more stringent PSD and Subpart BB limits.

Georgia Rule (III) [391-3-1-.02(2)(III)] applies to NO_x emissions from fuel burning equipment installed or modified after May 1, 1999, rated equal to or greater than 10 MMBtu/hr and less than or equal to 250 MMBtu/hr, and located on a list of counties which includes Floyd County. The rule limits NO_x emissions to 30 ppm @ 3% O₂ on a dry basis during the period of May 1st to September 30th of each year. Package Boiler 2 is subject to this limit.

Georgia Rule 391-3-1-.02(6)(a)(iii) applies to Waste Wood Fired Combination Boilers that fire wood waste at a capacity greater than 100 MMBtu/hr. Under the rule, the facility must install a COMS for the measurement of opacity. The rule applies to Waste Fuel Boiler WF. The COMS is also a requirement under 40 CFR 60 Subpart Db.

Federal Rule - PSD

The regulations for PSD in 40 CFR 52.21 require that any new major source or modification of an existing major source be reviewed to determine the potential emissions of all pollutants subject to regulations under the Clean Air Act. The PSD review requirements apply to any new or modified source which belongs to one of 28 specific source categories having potential emissions of 100 tons per year or more of any regulated pollutant, or to all other sources having potential emissions of 250 tons per year or more of any regulated pollutant. They also apply to any modification of a major stationary source which results in a significant net emission increase of any regulated pollutant.

The PSD regulations require that any major stationary source or major modification subject to the regulations meet the following requirements:

- Application of BACT for each regulated pollutant that would be emitted in significant amounts;
- Analysis of the ambient air impact;
- Analysis of the impact on soils, vegetation, and visibility;
- Analysis of the impact on Class I areas; and
- Public notification of the proposed plant in a newspaper of general circulation.

Definition of BACT

The PSD regulation requires that BACT be applied to all regulated air pollutants emitted in significant amounts. Section 169 of the Clean Air Act defines BACT as an emission limitation reflecting the maximum degree of reduction that the permitting authority (in this case, EPD), on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such a facility through application of production processes and available methods, systems, and techniques. In all cases BACT must establish emission limitations or specific design characteristics at least as stringent as applicable New Source Performance Standards (NSPS). In addition, if EPD determines that there is no economically reasonable or technologically feasible way to measure the emissions, and hence to impose and enforceable emissions standard, it may require the source to use a design, equipment, work practice or operations standard or combination thereof, to reduce emissions of the pollutant to the maximum extent practicable.

The BACT determination should, at a minimum, meet two core requirements. The first core requirement is that the determination follow a “top-down” approach. The second core requirement is that the selection of a particular control system as BACT must be justified in terms of the statutory criteria and supported by the record and must explain the basis for the rejection of other more stringent candidate control systems.

EPD’s procedures for performing a top down BACT analysis are set forth in EPA’s Draft New Source Review Workshop Manual (Manual), dated October 1990. One critical step in the BACT analysis is to determine if a control option is technically feasible. If a control is determined to be infeasible, it is eliminated from further consideration. The Manual applies several criteria for determining technical feasibility. The first is straightforward: if the control has been installed and operated by the type of source under review, it is demonstrated and technically feasible.

For controls not demonstrated using this straightforward approach, the Manual applies a more complex approach that involves two concepts for determining technical feasibility: availability and applicability. A technology is considered available if it can be obtained through commercial channels. An available control is applicable if it can be reasonably installed and operated on the source type under construction. A technology that is available and applicable is technically feasible.

The Manual provides some guidance for determining availability. For example, a control is generally considered available if it has reached the licensing and permitting stages of development. However, the Manual further provides that a source would not be required to experience extended time delays or resource penalties to allow research to be conducted on new technologies. In addition, the applicant is not expected to experience extended trials learning how to apply a technology on a dissimilar source type. Consequently, technologies in the pilot scale testing stages of development are not considered available for BACT.

As mentioned before, the Manual also requires available technologies to be applicable to the source type under construction before a control is considered technically feasible. For example, deployment of the control technology on an existing source with similar gas stream characteristics is generally a sufficient basis for concluding technical feasibility. However, even in this instance, the Manual would allow for an applicant to make a demonstration to the contrary. For example, an applicant could show that unresolved technical difficulties with applying a control to the source under consideration (e.g., size of the unit, location of the proposed site, and operating problems related to the specific circumstances of the source) make a control technically infeasible.

According to the Environmental Appeals Board (see In re: Kawaihae Cogeneration Project, 7 E.A.D. 107 at page 1996, EAB 1997), the section on “collateral environmental impacts” of a proposed technology has been interpreted to mean that “if application of a control system results directly in the release (or removal) of pollutants that are not currently regulated under the Act, the net environmental impact of such emissions is eligible for consideration in making the BACT determination.” The Appeals Board continues, “The Administration has explained that the primary purpose of the collateral impacts clause is... to temper the stringency of the technological requirements whenever one or more of the specified collateral impacts – energy, environmental, or economic – renders the use of the most effective technology inappropriate.” Lastly, the Appeals Board document states, “Unless it is demonstrated to the satisfaction of the permit issuer that such unusual circumstances exist, then the permit applicant must use the most effective technology.”

The five steps of a top-down BACT review procedure identified by EPA per BACT guidelines are listed below:

- Step 1: Identify all control technologies
- Step 2: Eliminate technically infeasible options
- Step 3: Rank remaining control technologies by control effectiveness
- Step 4: Evaluate most effective controls and document results
- Step 5: Select BACT

Now that the PSD BACT standards have been defined, the next step is to review the remaining applicable federal requirements. This step will aid in citing the appropriate legal authority for each requirement in the Title V permit. This analysis will show that the PSD BACT standards represent the most stringent limit.

Federal Rule – 40 CFR 60 Subpart Db

Recovery Furnace 5, Package Boiler 2, and Waste Fuel Boiler WF are boilers which were or will be constructed after June 19, 1984 and have heat input capacities greater than 100 MMBtu per hour. The units are therefore subject to NSPS Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*. The standard sets limits for PM, opacity, NO_x, and SO₂ based on boiler operating conditions.

All three boilers are subject to a limit of less than 20% opacity except for one six minute period of not more than 27%. The opacity limit is subsumed for Waste Fuel Boiler WF by a more stringent PSD limit of 10%. Compliance with this limit will be monitored with continuous opacity monitoring systems. Also, all fuel oil combusted in the units will be required to be very low sulfur fuel oil, thereby allowing the facility to avoid SO₂ reduction requirements. Fuel oil sulfur content will be monitored by review of fuel receipts.

Recovery Furnace 5, Package Boiler 2, and Waste Fuel Boiler WF are subject to NSPS PM limits; however, the limits are subsumed by more stringent PSD limits. Compliance with the PM limits will be achieved using ESPs for the Recovery Furnace and the Waste Fuel Boiler. Compliance with the PM limits will be achieved for Package Boiler 2 through the combustion of clean fuels.

Recovery Furnace 5 is not subject to a NO_x limit under the subpart due to the use of an annual oil capacity factor of 0.10 for the unit. Both Package Boiler 2 and Waste Fuel Boiler WF are subject to NO_x limits of 0.20 pounds per million Btu heat input. Compliance with these limits will be assured through the use of NO_x CEMS.

Federal Rule – 40 CFR 60 Subpart BB

Recovery Furnace 5 was constructed after 1976, subjecting it to NSPS Subpart BB, *Standards of Performance for Kraft Pulp Mills*. Subpart BB establishes a PM limit of 0.044 grain per dscf at ten percent oxygen. This limit is subsumed by a more stringent PSD / 40 CFR 63 Subpart MM limit of 0.21 grains per dscf. PM emissions will continue to be controlled with an ESP. The furnace is also subject to a TRS limit of 5 ppm. Compliance with the limit is assured through the use of a CEMS. The unit also uses a COMS to provide reasonable assurance of compliance with the opacity limit of 35% that is applicable while no fossil fuels are being fired.

Power Boiler 4 combusts total reduced sulfur (TRS) gases subject to NSPS Subpart BB, *Standards of Performance for Kraft Pulp Mills*; therefore the boiler must comply with the minimum temperature (1200 degrees Fahrenheit) and residence time (0.5 seconds) requirement prescribed by the subpart.

Federal Rule – 40 CFR 61 Subpart E

NESHAP Subpart E, *National Emission Standards for Mercury* applies to the drying or incinerating of municipal or industrial wastewater sludge. Waste Fuel Boiler WF will burn industrial wastewater sludge, therefore Subpart E will apply to the unit. The mercury limit is 7.1 pounds per 24-hour period and compliance can be determined either by stack testing or sampling of the sludge being burned. Inland has proposed to complete Method 105 sludge analysis to demonstrate compliance with the standard.

Federal Rule – 40 CFR 63 Subpart S

In addition to covering the optimization of the mill's production capacity, this permit application is intended to cover the necessary physical and permitting changes the mill will be undertaking to comply with the second phase of the Cluster Rule, Subpart S, *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*.

Phase II of the Cluster Rule requires compliance by April 15, 2006. The mill will therefore be implementing Phase II of the Cluster Rule during the timeframe of the mill optimization project. The mill is currently investigating how it plans to achieve compliance with this portion of the rule. The mill may either collect the off-gases from the E, F, and G washers and their associated filtrate tanks, and foam tanks, and route them to Waste Fuel Boiler WF for destruction or the mill may utilize the Clean Condensate Alternative in the rule which may allow continued venting of gases. In order to provide emission allowances in this application for either case, the permit application allowed for both the combustion of the E, F, and G washer and filtrate tank off-gasses in Waste Fuel Boiler WF, which forms SO₂ emissions, as well as the continued venting of the VOC and TRS.

Federal Rule – 40 CFR 63 Subpart MM

40 CFR 63 Subpart MM, *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*, promulgated March 13, 2001, sets standards for hazardous air pollutants (HAPs) from chemical recovery combustion equipment on site. After completion of the project, the only impacted units will be Recovery Furnace 5, Smelt Tank 5, Lime Kiln 1A, and Lime Kiln 2A. If a unit is reconstructed as defined by the MACT (Maximum Achievable Control Technology) II standard, the standards for new sources will apply to the reconstructed unit. Reconstruction is triggered if the costs for the modifications exceed 50% of the cost to install a new unit. Of these units, the only one being modified is Recovery Furnace 5 and the project costs for this project are well below 50% of the equivalent replacement costs. Therefore Recovery Furnace 5 is not being reconstructed per 40 CFR 63 Subpart MM by the proposed project. All four units will therefore be covered under the existing unit limits.

The purpose of the MACT II rule is to regulate HAP emissions, but it allows PM to be used as a surrogate for total HAPs. The MACT PM standards, and the regulated units that will operate after the completion of the project, are summarized in Table 2. The mill-wide equivalent emission limit is calculated based on the post-modification flow rates for the lime kilns and recovery furnaces and the post-modification black liquor solids throughput rate.

Table 2: Chemical Recovery Combustion Source MACT PM Emission Limits

Unit	MACT Emission Limit	EQ. MACT Emission Limit
Lime Kiln 1A	0.064 gr/dscf @ 10% O ₂	0.152 lb/ton BLS
Lime Kiln 2A	0.064 gr/dscf @ 10% O ₂	0.152 lb/ton BLS
Smelt Tank 5	0.20 lb/ton BLS	0.20 lb/ton BLS
Recovery Furnace 5	0.044 gr/dscf @ 8% O ₂	0.978 lb/ton BLS
Mill Wide Equivalent Emission Limit	1.482 lb/ton BLS	1.482 lb/ton BLS

As an alternative to the specific emission limits shown in Table 2, the MACT rule allows pulp and paper mills to establish facility wide bubble PM emission limits for the individually regulated sources. This option allows for the calculation of a total mill-wide emission limit for all combustion sources based on the MACT standards and then allows for the allocation of these emissions to the individual emission sources as determined by the mill. This "bubble" option will thereby allow the mill to over control some sources while under controlling others. The bottom of Table 2 provides the mill's overall lb PM/ton BLS limit (1.482 lb/ton BLS).

In the case of the regulated units at the mill, Recovery Furnace 5 and Smelt Tank 5 are already regulated at or below the MACT emission limits. The lime kilns are currently permitted at a process weight rate rule limit which is greater than the 0.064 gr/dscf emission limit for lime kilns. The mill therefore proposes to implement a bubble limit. Table 3 outlines the proposed limit for each of the units as well as the corresponding mill wide equivalent emission limit.

Table 3: Proposed MACT PM Bubble Limit Emission Limits

Unit	MACT Emission Limit	EQ. MACT Emission Limit	Basis
Lime Kiln 1A	0.106 gr/dscf @ 10% O ₂ ¹	0.306 lb/ton BLS	Exhaust concentration at peak production rate and the process weight rate rule production limit.
Lime Kiln 2A	0.155 gr/dscf @ 10% O ₂	0.290 lb/ton BLS	
Smelt Tank 5	0.14 lb/ton BLS	0.14 lb/ton BLS	Current Permit Limit
Recovery Furnace 5	0.021 gr/dscf @ 8% O ₂	0.467 lb/ton BLS	Proposed BACT emission Limit
Mill Wide Equivalent Emission Limit	1.203 lb/ton BLS	1.203 lb/ton BLS	EPA MACT Compliance Spreadsheet

¹This limit would apply only when firing fuel oil. The current NSPS Subpart BB current limit of 0.067 gr/dscf would still apply when firing natural gas.

Federal Rule – 40 CFR 63 Subpart DDDDD

New Waste Fuel Boiler WF will be subject to 40 CFR 63 Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters* upon startup. The standard was proposed on January 13, 2003 and has been finalized, but has not yet entered the Federal Register. The final rule sets PM emission limits of 0.025 lb/MMBtu (as a surrogate for metal HAPs), as well as CO emission limits (400 ppm @ 7% O₂), HCl limits (0.02 lb/MMBtu), and mercury limits (0.000003 lb/MMBtu) for large (>10 MMBtu/hr) industrial solid fuel fired boilers. Alternatively, the total selected metals limit of 0.0003 lb/MMBtu may be used instead of the 0.025 lb/MMBtu PM limit. The industrial boiler MACT also sets an opacity limit of 10 percent opacity. The requirements for this subpart will not be included in the permit until it is published as final in the Federal Register.

Power Boiler 4 will eventually be covered under the standards set for existing large solid fuel fired boilers. The costs of the proposed modifications to the Power Boiler are estimated at 6.2 million dollars and the estimated replacement cost for the unit is 60 million dollars. The costs are well below 50% of the replacement costs; therefore the modifications will not trigger the MACT standard for the unit. The unit will have three years to comply with the standard once it is published.

State and Federal – Startup and Shutdown and Excess Emissions

Excess emission provisions for startup, shutdown, maintenance, and malfunction are provided in Georgia Rule 391-3-1-.02(2)(a)7. Excess emissions from the units associated with the proposed modification will most likely result from a malfunction of the associated control equipment. The facility cannot anticipate or predict malfunctions. However, the facility must minimize emissions during periods of startup, shutdown, and malfunction.

Federal Rule – 40 CFR 64- Compliance Assurance Monitoring

40 CFR 64, *Compliance Assurance Monitoring* applies to pollutant specific emission units (PSEUs) as defined in the subpart. PSEUs are units for which there exists an emission standard for which there is a Part 64 control device and where the pre-control potential emission rate is equal to or greater than 100 percent of the major source threshold. The frequency of data collection under Part 64 depends on whether the controlled potential to emit exceeds 100 tons per year, in which case it is considered to be a “large PSEU.”

Recovery Furnace 5 and Waste Fuel Boiler WF are being modified and qualify as large PSEUs for the emission of PM. The facility is therefore required to collect four or more data values for the respective ESPs (ESP power) equally spaced over each hour. CAM requirements for Power Boiler 4 are not being incorporated at this time because the changes being made to the boiler do not qualify as modifications based on emission changes. CAM requirements for the Power Boiler and all other applicable units will be added in the first Title V renewal permit.

4.0 CONTROL TECHNOLOGY REVIEW

RECOVERY FURNACE 5 – PARTICULATE MATTER

Step 1: Identify all Control Technologies

The currently available particulate matter (PM) controls include electrostatic precipitators (ESP), wet ESPs (WESP), baghouses, and high efficiency wet scrubbers. In the case of an ESP, high voltage electrodes impart a negative charge to the particles entrained in the exhaust gas stream. These negatively charged particles are then attracted to a grounded collecting surface, which is positively charged. The cleaned gas then exits the ESP. Inside the ESP, the particles build up on the collecting plates. At periodic intervals the plates are rapped, causing the agglomerated particles to fall into hoppers. The particles are then removed from the hoppers by a gravity fed rotary screw arrangement. In the case of wet ESPs, a liquid wash down collects the particulates and wet sluicing is used to remove the particles. ESPs offer very high efficiencies for particulates of very small size (above 1 micron in size).

Dry filtration is a common method for removing dry particulate matter from many types of industrial gas streams. Filters are available in a variety of types, materials, and sizes. Fabric filters are reusable filters that can be cleaned by shaking, reversing the airflow, or pulsing the airflow.

Wet scrubbers remove particulates from a gas stream by capturing the particles in liquid droplets. Scrubber systems are generally more expensive to purchase and operate than dry filtration. However, scrubbers present a particulate removal alternative for applications where dry filtration is not recommended based on particulate matter characteristics.

Option 1: Dry Electrostatic Precipitator
 Option 2: Wet Electrostatic Precipitator
 Option 3: Dry Filtration (Baghouse)
 Option 4: Wet Scrubber

Step 2: Eliminate Technically Infeasible Options

Option 3 – Dry Filtration (Baghouse)

While baghouses offer the best PM control for the smallest particles, the high moisture content of the exhaust gases along with the hygroscopic nature of the salt cake would blind a baghouse; therefore it is not considered a practical solution. There are no known applications of baghouses on recovery furnaces.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Wet and dry ESPs are considered the most effective means of controlling PM from a recovery furnace. Most operating recovery furnaces utilize this technology. A venturi scrubber would be technically viable; however the scrubber would not be expected to be as effective as an ESP.

Table 4: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	ESP	~99%
2	Wet Scrubber	~75%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-2 of the PSD application is a list from the U.S. EPA BACT / LAER Clearinghouse (RBLC) database of PM emission rates and controls for recovery furnaces. As indicated, the most utilized PM control technology for recovery furnaces is the ESP. Since Recovery Furnace 5 currently utilizes a dry ESP for PM emission control and ESPs are the most effective technology for removing PM emissions from recovery furnaces, no additional controls are being proposed for the project.

Step 5: Select BACT

The BACT database emission limits for PM emissions from a recovery furnace range from 0.021 gr/dscf @ 8% O₂ to 0.15 gr/dscf @ 8% O₂. Inland proposes to meet a limit of 0.021 gr/dscf @ 8% O₂ while firing either fuel oil or black liquor. This limit is approximately equal to that of Georgia Rule (e) for PM at the maximum production rate. Showing compliance with this limit will also serve to demonstrate compliance with 40 CFR 63 Subpart MM. Emissions due to the firing of fuel oil are expected to be lower than that from firing black liquor solids; therefore the proposed limit will be met when firing black liquor solids or fuel oil.

Conclusion – PM Control

The Division has determined that Inland’s proposal to use a dry ESP to minimize PM emissions constitutes BACT. The BACT emission limit has been established as 0.021 gr/dscf @ 8% O₂ as also proposed by Inland. Compliance with the PM limit must be demonstrated through performance testing and monitoring of the associated ESP.

Summary – Control Technology Review for PM from Recovery Furnace 5

To fulfill the PSD permitting requirements for PM, a BACT analysis was conducted for Recovery Furnace 5. The BACT selection for Recovery Furnace 5 is summarized in Table 5. The emission limit selected is representative of previous PSD BACT determination levels published in the RBLC database.

Table 5: BACT Summary for Recovery Furnace 5

Pollutant	Control Technology	Proposed BACT Limit
PM	Dry ESP	0.021 gr/dscf @ 8% O ₂

RECOVERY FURNACE 5 – CARBON MONOXIDE

Step 1: Identify all Control Technologies

CO is a result of incomplete combustion and can be minimized through the use of good combustion practices (including assuring sufficient air-to-fuel ratios). Good combustion practices can be enhanced through the use of staged combustion, which involves the injection of combustion air at different levels in the furnace. Beyond combustion control, the remaining CO could be oxidized to CO₂ in a downstream control device. This could be an incinerator, which would combust fuel to raise the temperature of the gases to combustion temperature, or a catalyst bed, which would allow oxidation to CO₂ at lower temperature. Fuel would also be required for a CO catalyst application because the exhaust gas temperature would not be sufficiently high for a catalyst to be effective.

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| Option 1: Staged Combustion and Good Combustion Practices
Option 2: Oxidation (Incineration)
Option 3: Catalytic Reduction |
|--|

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 6: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Staged combustion and good combustion practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-4 of the PSD application is a list from the RBLC database of CO emission limits and controls that are in place for recovery furnaces. It indicates that the only control technology in use for minimizing CO emission from recovery furnaces is the combination of staged combustion and good combustion operation practices. Currently, Recovery Furnace 5 is operated with staged combustion and good combustion practices. The proposed project calls for the installation of a dedicated fan for the third stage of combustion air. This should allow for more combustion air and thereby enhance the combustion process.

CO control through the utilization of good combustion controls is designed into all recovery furnaces. To further reduce CO emissions, the addition of an oxidation catalyst could potentially be utilized. However, the exhaust gas stream temperature must be significantly higher for the oxidation catalyst to work. At exhaust gas temperatures below 800 degrees Fahrenheit, the oxidation catalyst becomes ineffective. The average temperature of Recovery Furnace 5 exhaust gases is roughly 300 degrees Fahrenheit. An oxidation catalyst would not be effective at reducing CO emissions in Recovery Furnace 5 unless the exhaust gas temperature was raised considerably by reheating. Raising the temperature of the gases would require significant heat injection through additional fuel firing or through a derating of the boiler. In either case, significant energy costs would result. Furthermore, significant emissions of products of combustion, notably NO_x, would result from the combustion needed to either raise the temperature of the exhaust gases or through increased fuel consumption to make up for the loss in boiler efficiency if the recovery furnace was derated. Based on these energy and environmental costs, neither oxidation alone, or with a catalyst, is considered practically feasible. There would also be significant technical hurdles because of the sulfur compounds contained in the off gases.

Step 5: Select BACT

The BACT limits in the database range from 169 to 879 ppm and control technologies include combustion control, furnace design and operation, and good combustion practices. Inland proposes that CO BACT be defined as staged combustion and good combustion practices and an emission rate of 650 ppm @ 8% O₂. This level is proposed to account for process variations such as black liquor concentration and the wood species being burned. This proposed BACT emission limit is intended to apply while firing black liquor solids and fuel oil in combination. See Package Boiler BACT analysis for CO limit while burning fuel oil alone.

Conclusion – Carbon Monoxide Control

The Division has determined that Inland's proposal to use staged combustion and good combustion practices to minimize CO emissions constitutes BACT. The BACT emission limit has been established as 650 ppm @ 8% O₂ while burning black liquor solids as proposed by Inland. Compliance with the CO limit must be demonstrated through performance testing and monitoring furnace oxygen. See Package Boiler BACT analysis for the CO limit while burning fuel oil alone.

Summary – Control Technology Review for CO from Recovery Furnace 5

To fulfill the PSD permitting requirements for CO, a BACT analysis was conducted for Recovery Furnace 5. The BACT selection for Recovery Furnace 5 is summarized in Table 7. Although there are BACT analyses that have limits less than those proposed by the facility, it should be noted that the new limit does not equal a linear increase of CO emissions based on the increase of black liquor solids throughput. See Package Boiler BACT analysis for the CO limit while burning fuel oil alone.

Table 7: BACT Summary for Recovery Furnace 5

Pollutant	Control Technology	Proposed BACT Limit
CO	Staged Combustion and Good Combustion Practices	650 ppm @ 8% O ₂ while burning BLS
CO	Good Combustion Practices	0.20 lb/MMBTU while burning fuel oil alone

RECOVERY FURNACE 5 – VOLATILE ORGANIC COMPOUNDS

Step 1: Identify all Control Technologies

As with CO, VOCs are a result of incomplete combustion and VOC can be controlled through oxidation as well as catalytic technologies.

Option 1: Staged Combustion and Good Combustion Practices
 Option 2: Oxidation (Incineration)
 Option 3: Catalytic Reduction

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 8: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Staged Combustion and Good Combustion Practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-5 of the PSD application is a list from the RBLC database of VOC emission limits and controls that are currently in place for recovery furnaces. The most effective control technology in the database for minimizing VOC emissions from recovery furnaces is staged combustion and good combustion operation practices. Currently, Recovery Furnace 5 uses staged combustion and good combustion practices. The same economic and environmental conclusions apply for VOC that were applicable for CO for the use of oxidation or catalytic reduction.

Step 5: Select BACT

The BACT limits in the database range from 0.03 to 0.48 lb/MMBtu and control technologies include combustion control, furnace design and operation, and good combustion practices. Inland proposes VOC BACT to be defined as staged combustion and good combustion practices and an emission rate of 0.04 lb/MMBtu. See Package Boiler BACT analysis for the VOC limit while burning fuel oil alone.

Conclusion – VOC Control

The Division has determined that Inland's proposal to use staged combustion and good combustion practices to minimize VOC emissions constitutes BACT. The BACT emission limit has been established as 0.04 lb/MMBtu, as proposed by Inland, while burning black liquor solids. Compliance with the VOC limit must be demonstrated through performance testing and surrogate monitoring of furnace oxygen. See Package Boiler BACT analysis for the VOC limit while burning fuel oil alone.

Summary – Control Technology Review for VOC from Recovery Furnace 5

To fulfill the PSD permitting requirements for VOC, a BACT analysis was conducted for Recovery Furnace 5. The BACT selection for Recovery Furnace 5 is summarized in Table 9. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database. See Package Boiler BACT analysis for the VOC limit while burning fuel oil alone.

Table 9: BACT Summary for Recovery Furnace 5

Pollutant	Control Technology	Proposed BACT Limit
VOC	Staged Combustion and Good Combustion Practices	0.04 lb/MMBtu while burning BLS
VOC	Good Combustion Practices	0.02 lb/MMBtu while burning fuel oil alone

RECOVERY FURNACE 5 – TOTAL REDUCED SULFUR (INCLUDING H₂S)

Step 1: Identify all Control Technologies

The TRS compounds from a recovery furnace consist of hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide. The amount of TRS emissions is highly dependent upon the type of evaporator (direct or indirect) used to concentrate the black liquor solids. Direct contact evaporators use furnace exhaust gases to concentrate black liquor solids while non-contact evaporators utilize indirect heat from steam generated by the furnace to concentrate the liquor under vacuum. Indirect contact evaporators result in significantly less TRS compounds being emitted.

TRS emissions can be reduced by process modifications, improved operating conditions, efficient operation of the recovery furnace, avoiding overloading, and by maintaining sufficient oxygen, residence time, and turbulence. The utilization of non-direct contact evaporators (NDCE) in new recovery furnaces reduces TRS emissions substantially. Caustic packed tower scrubbers are also effective in controlling a portion of TRS emission, primarily H₂S, but not the organic forms of TRS (methyl mercaptan, dimethyl sulfide, and dimethyl disulfide). It is estimated that 80% of the TRS from Recovery Furnace 5 is H₂S; therefore, by assuring BACT is met for TRS, it is assumed that BACT for H₂S will also be met.

Option 1: NDCE System Design / Good Operation Practices
Option 2: Wet Scrubber

Step 2: Eliminate Technically Infeasible Options

Both options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

The utilization of NDCE design for recovery furnaces is most effective in the reduction of TRS emissions. Caustic scrubbers are less effective in the control of TRS emission because they only control a portion of the TRS.

Table 10: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	NDCE System Design / Good Operation Practices	~99% ¹
2	Wet Scrubber	~65%

¹Direct contact unit versus non-direct contact unit according to The Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1 (AP-42), Chapter 10.2, Table 10.2-1.

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-6 of the PSD application is a list from the RBLC database of TRS emission limits and controls that are in place for recovery furnace. It indicates that the most effective control technology for minimizing TRS emissions from recovery furnaces is furnace design (NDCE system) and good operating practices. Recovery Furnace 5 utilizes a NDCE system and good operating practices.

Step 5: Select BACT

The limits in the BACT database range from 3 to 20 ppm and control technologies include combustion control and furnace design and operation as well as low odor design and non-contact evaporator system design. Recovery Furnace 5 is an NSPS unit and the NSPS limit for TRS emission from an NDCE recovery furnace is 5 ppm. Inland proposes a BACT limit of 5 ppm, on a dry basis corrected to 8% oxygen, on a 12-hour basis. The limit is the same BACT level established for the Georgia Pacific Cedar Springs recovery furnace that recently went through a BACT analysis in Georgia. It is estimated that 80% of the TRS is H₂S; therefore the proposed BACT level for H₂S, is set at 4 ppm @ 8% oxygen.

Conclusion – TRS Control (Including H₂S)

The Division has determined that Inland's proposal to use NDCE design and good operating practices to minimize TRS and H₂S emissions constitutes BACT. The BACT emission limits have been established as 5 ppm and 4 ppm, respectively, corrected to 8% O₂. Compliance with the emission limits must be demonstrated through continuous emissions monitoring.

Summary – Control Technology Review for TRS and H₂S from Recovery Furnace 5

To fulfill the PSD permitting requirements for TRS and H₂S, a BACT analysis was conducted for Recovery Furnace 5. The BACT selection for Recovery Furnace 5 is summarized in Table 11. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database.

Table 11: BACT Summary for Recovery Furnace 5

Pollutant	Control Technology	Proposed BACT Limit	Averaging Period
TRS	NDCE Design and Good Operating Practices	5 ppm, 8% O ₂	12 hours
H ₂ S	NDCE Design and Good Operating Practices	4 ppm, 8% O ₂	12 hours

POWER BOILER 4 – PARTICULATE MATTER**Step 1: Identify all Control Technologies**

The current available PM controls include electrostatic precipitators, wet ESPs, baghouses, and high efficiency wet scrubbers. The theory and operation of each of these control technologies was discussed in detail in the Recovery Furnace 5 BACT analysis.

Option 1: Dry Electrostatic Precipitator Option 2: Wet Electrostatic Precipitator Option 3: Dry Filtration (Baghouse) Option 4: Wet Scrubber

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

According to AP-42, baghouses are considered the most effective means of PM control from a pulverized coal fired power boiler followed second by ESP technology. A scrubber would be expected to be the least effective of the available PM control technologies.

Table 12: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Dry Filtration (Baghouse)	~99.8%
2	ESP	~99.2%
3	Wet Scrubber	~97%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-7 of the PSD application is a list from the RBLC database of PM emissions limits and controls that are in place for pulverized coal fired boilers. It shows that the units with the lowest emission rates are controlled by baghouses, with the remaining units being controlled by ESPs.

Step 5: Select BACT

The units with the lowest emission rates in the BACT database are controlled by baghouses. The remaining units are controlled by ESPs. Based on EPA AP-42 emissions data, ESPs on pulverized coal fired boilers are typically 99.2% efficient at controlling PM while baghouses are typically 99.8% efficient. If a baghouse were used instead of the current ESP, it would be expected to collect an additional 0.6% of the uncontrolled PM emission from Power Boiler 4. EPA estimates the uncontrolled PM from a pulverized coal fired boiler at 100 pound per ton of coal, based on a typical ash content of 10%. Based on this emission factor, 0.6% would equate to 57 tpy from the modified boiler.

The costs of installing a baghouse in place for the existing ESP are evaluated using the latest EPA cost estimating spreadsheets for baghouses. The results of this analysis found that the annualized costs for operating a baghouse on the exhaust gas stream from Power Boiler 4, in lieu of the existing ESP, would be roughly \$1,300,000 per year. The expected incremental economic cost of installing a baghouse would therefore be estimated at \$22,800 per ton of PM reduced, which exceeds what would be considered economically reasonable. A baghouse is therefore not considered economically feasible for the proposed application. The primary difference in this application and the other units listed in the clearinghouse is that this BACT analysis is for a modified unit that already has an ESP and not the installation of a new unit. The BACT analysis has taken into account the effectiveness of the pollution controls that are currently in place.

The ash content of the coal, as well as the fly ash resistivity, can significantly impact the collection effectiveness of the ESP. Inland plans to burn coal with a sulfur content up to 1.29%. Inland proposes a BACT level of 0.07 lb / MMBtu, which falls between the range of PM emission rates found in the clearinghouse (0.01 to 0.286 lb / MMBtu). The proposed level represents a 77% reduction from what would be the state permitted level under Rule (d) for the unit. The limit is also equal to the limit in the proposed MACT rule 40 CFR 63 Subpart DDDDD (Boiler MACT).

Conclusion – PM Control

The Division has determined that Inland’s proposal to use the existing dry ESP to minimize PM emissions constitutes BACT. The BACT emission limit has been established as 0.07 lb/MMBtu, as proposed by Inland. Compliance with the PM limit must be demonstrated through performance testing and monitoring of the ESP.

Summary – Control Technology Review for PM from Power Boiler 4

To fulfill the PSD permitting requirements for PM, a BACT analysis was conducted for Power Boiler 4. The BACT selection for Power Boiler 4 is summarized in Table 13. The emission limit selected is representative of previous PSD BACT determination levels published in the RBLC database.

Table 13: BACT Summary for Power Boiler 4

Pollutant	Control Technology	Proposed BACT Limit
PM	Dry ESP	0.07 lb/MMBtu

POWER BOILER 4 – CARBON MONOXIDE

Step 1: Identify all Control Technologies

The generation of CO can be minimized through the use of good combustion practices, oxidation to CO₂ in a downstream unit, or by passing the gases over a catalyst at sufficiently high temperatures.

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|---|
| Option 1: Staged Combustion and Good Combustion Practices
Option 2: Oxidation
Option 3: Catalyst Technology |
|---|

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness**Table 14: Ranking of Control Technology**

Control Technology Ranking	Control Technology	Control Efficiency
1	Staged Combustion and Good Combustion Practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-9 of the PSD application is a list from the RBLC database of CO emission limits and controls that are in place for pulverized coal fired boilers. The most effective control technology listed in the RBLC database for minimizing CO emissions from pulverized coal fired boilers is good combustion operation practices. Power Boiler 4 currently uses good combustion practices. Oxidation and catalytic reduction are not practically feasible due to the same economic and environmental impacts discussed for Recovery Furnace 5.

Step 5: Select BACT

The BACT CO emission limits in the database range from 0.018 to 0.80 lb/MMBtu and control technologies include combustion control, furnace design and operation, and good combustion practices. Currently there is not a NSPS limit for CO emissions from power boilers. Inland proposes CO BACT to be defined as staged combustion and good combustion practices and an emission rate of 300 ppm @ 3% O₂, which is roughly equivalent to 0.25 lb/MMBtu. With this proposed project the mill will be installing low NO_x burners on the coal-fired boiler. This installation is expected to reduce NO_x to less than half its current level. With this reduction in NO_x, CO emissions may potentially increase because of the design of the low NO_x burners. A small increase in CO would, however, be considered warranted due to significant reduction in NO_x, which is considered a higher priority pollutant.

Conclusion – CO Control

The Division has determined that Inland's proposal to use good combustion practices to minimize CO emissions constitutes BACT. The BACT emission limit has been established as 300 ppm @ 3% O₂, as propose by Inland. Compliance with the CO limit must be demonstrated through performance testing and monitoring furnace oxygen.

Summary – Control Technology Review for CO from Power Boiler 4

To fulfill the PSD permitting requirements for CO, a BACT analysis was conducted for Power Boiler 4. The BACT selection for Power Boiler 4 is summarized in Table 15. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database.

Table 15: BACT Summary for Power Boiler 4

Pollutant	Control Technology	Proposed BACT Limit
CO	Stage Combustion and Good Combustion Practices	300 ppm @ 3% O ₂

POWER BOILER 4 – VOLATILE ORGANIC COMPOUNDS**Step 1: Identify all Control Technologies**

As with CO, VOC is a result of incomplete combustion and VOC can be controlled through oxidation as well as catalytic technologies.

Option 1: Staged Combustion and Good Combustion Practices
 Option 2: Oxidation (Incineration)
 Option 3: Catalytic Reduction

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 16: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Staged Combustion and Good Combustion Practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-10 of the PSD application is a list from the RBLC database of VOC emission limits and controls that are in place for pulverized coal fired power boilers. As specified in that table, the most effective control technology for minimizing VOC emissions from pulverized coal fired boilers is good combustion practices. Currently, the operation of Power Boiler 4 qualifies as good combustion practice.

Oxidation and catalytic reduction are not practically feasible due to the same economic and environmental impact reasons discussed for Recovery Furnace 5.

Step 5: Select BACT

The BACT emission rates in the RBLC database vary from 0.0036 to 1.8 lb/MMBtu. Currently there is not a NSPS limit for VOC emissions from coal-fired boilers. Inland proposes VOC BACT to be defined as staged combustion and good combustion practices and an emission rate of 0.01 lb/MMBtu.

Conclusion – VOC Control

The Division has determined that Inland’s proposal to use staged combustion and good combustion practices to minimize VOC emissions constitutes BACT. The BACT emission limit has been established as 0.01 lb/MMBtu, as proposed by Inland. Compliance with the emission limit must be demonstrated through performance testing and monitoring furnace oxygen.

Summary – Control Technology Review for VOC from Power Boiler 4

To fulfill the PSD permitting requirements for VOC, a BACT analysis was conducted for Power Boiler 4. The BACT selection for Power Boiler 4 is summarized in Table 17. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database.

Table 17: BACT Summary for Power Boiler 4

Pollutant	Control Technology	Proposed BACT Limit
VOC	Staged Combustion and Good Combustion Practices	0.01 lb / MMBtu

WASTE FUEL BOILER – PARTICULATE MATTER

Step 1: Identify all Control Technologies

The current available PM controls include electrostatic precipitators, wet ESPs, baghouses, and high efficiency wet scrubbers. The theory and operation of each of these control technologies was discussed in detail in the Recovery Furnace 5 BACT analysis.

Cyclones are also used to control the PM from waste fuel boilers. PM is removed from the flue gas by a combination of centrifugal and gravitational forces developed from swirling winds in the cyclone that force the particulate to collect in a hopper below. Cyclone control is limited to the collection of heavier particles and is typically used as a pre-filter before other control devices.

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| Option 1: Dry Electrostatic Precipitator
Option 2: Wet Electrostatic Precipitator
Option 3: Dry Filtration (Baghouse)
Option 4: Wet Scrubber
Option 5: Cyclone |
|--|

Step 2: Eliminate Technically Infeasible Options

All options are considered technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

ESPs are considered the most effective means of PM control from a waste fuel boiler. The proposed waste fuel boiler will be converted from existing Recovery Furnace 3, which currently has an ESP to control PM. This ESP will continue to be used for particulate control on the new waste fuel boiler. According to the RBLC database, a baghouse is the second most effective control method followed by cyclones and venturi scrubbers. Though the units listed in the clearinghouse with the lowest emission rates have ESPs, a baghouse might offer improved reduction efficiencies over an ESP.

Table 18: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	ESP	~99%
2	Baghouse	~99%
3	Cyclones and Scrubbers	~90%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-11 of the PSD application is a list from the RBLC database of PM emission limits and controls in place for wood waste fired boilers. The units with the lowest emission rates are controlled by ESPs with the remaining units controlled by baghouses, cyclones, and venturi scrubbers.

Step 5: Select BACT

For the proposed project, Inland will be converting Recovery Furnace 3 to Waste Fuel Boiler WF. The new waste fuel boiler at the mill will burn woodwaste (including bark and municipal woodwaste such as pallets), wastewater sludge, tire derived fuel, No. 2 Fuel oil, used fuel oil, waste from the recycle fiber plant, and boiler ash recovered from the mill's landfill. Recovery Furnace 3 is currently equipped with an ESP for the control of PM emissions. As indicated in the clearinghouse, PM limits range from 0.02 to 0.1 lb/MMBtu. Many of these units do not burn the wide range of fuels that will be burned in the proposed boiler. The units that most closely match the Inland boiler are the Interstate Paper boiler located in Riceboro, Georgia (not currently listed in the clearinghouse) and the Beaver-Livermore Falls boiler located in Maine. Both these units burn a similar mix of fuels and were permitted at 0.03 lb/MMBtu. Inland proposes a PM emission limit of 0.025 lb/MMBtu for the unit, which is lower than these similar units.

In order to achieve an emission level as low as 0.02 lb/MMBtu it is expected that the unit would need to install a baghouse in lieu of the existing ESP. Based on the EPA costs estimating spreadsheets and the proposed boiler design, the baghouse would cost an estimated \$1,200,000 per year. A baghouse would be expected to allow for a reduction of the PM limit from 0.025 lb/MMBtu to 0.02 lb/MMBtu, for a reduction of 0.005 lb/MMBtu. A baghouse would therefore be expected to result in a PM reduction of 18.7 tpy at an incremental cost of \$64,000 per ton reduction, which would not be considered cost effective. Inland proposes to use the existing ESP and an emission limit of 0.025 lb/MMBtu as BACT for the Waste Fuel Boiler.

Conclusion – PM Control

The Division has determined that Inland's proposal to use a dry ESP to minimize PM emissions constitutes BACT. The BACT emission limit has been established as 0.025 lb/MMBtu as requested by Inland. Compliance with the emission limit must be determined through performance testing and monitoring of the ESP.

Summary – Control Technology Review for PM from the Waste Fuel Boiler

To fulfill the PSD permitting requirements for PM, a BACT analysis was conducted for the Waste Fuel Boiler. The BACT selection for Waste Fuel Boiler WF is summarized in Table 19. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database. The facility is also taking an opacity limit of 10% on a 6 minute average, except for one 6-minute period per hour of not more than 27% opacity.

Table 19: BACT Summary for the Waste Fuel Boiler

Pollutant	Control Technology	Proposed BACT Limit
PM	Dry ESP	0.025 lb/MMBtu
Opacity	Dry ESP	10% on a six minute average One 6 minute period per hour of not more than 27%

WASTE FUEL BOILER – CARBON MONOXIDE

Step 1: Identify all Control Technologies

The generation of CO emissions is minimized through the use of good combustion practices, oxidation in a secondary unit, or catalytic conversion to CO₂. In the case of the waste fuel boiler combustion effectiveness and the CO emission rate is largely determined by the design of the furnace. The primary types of furnaces used to burn bark are stoker fired units and fluidized bed systems. In fluidized bed systems the combustion air is forced up through the boiler at a sufficient velocity to fluidize the boiler bed and therefore heat the fuel quickly and evenly. This technique provides good fuel air mixing and therefore provides more complete combustion than in a stoker-fired boiler. Such boilers are inherently low emitters of CO. The proposed boiler will utilize a fluidized bed boiler design.

- Option 1: Staged Combustion and Good Combustion Practices
- Option 2: Oxidation (Incineration)
- Option 3: Catalytic Conversion

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 20: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Staged combustion and Good Combustion Practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-13 of the PSD application is a list from the RBLC database of CO emission limits and controls that are in place for wood waste boilers. The most effective control technology in the database for minimizing CO emission from wood waste boilers is staged combustion and good combustion practices. The new waste fuel boiler will be operated using good combustion practices and will utilize a fluidized bed design that should minimize CO emissions. Oxidation and catalytic reduction are not practically feasible due to the same economic and environmental impacts discussed for Recovery Furnace 5.

Step 5: Select BACT

The BACT emission limits for CO range from 0.15 to 0.66 lb/MMBtu and control technologies include combustion control, furnace design and operation, and good combustion practices. Currently there is not a NSPS limit for CO emissions from wood waste boilers. Inland proposes CO BACT to be defined as staged combustion and good combustion practices and an emission rate of 368 ppm @ 3% O₂. This is below the proposed MACT limitations for wood waste boilers (400 ppm @ 3% O₂) and corresponds to 0.3 lb/MMBtu heat input, which also falls well within the BACT / LAER Clearinghouse levels.

Because the bark and wood waste comes from various sources, and in most cases is stored outdoors, the moisture content of the fuel can vary widely. The proposed CO BACT level is expected to allow for this fuel variability. This proposed BACT emission limit is intended to apply during all operating conditions, which include firing wood waste, sludge, TDF, and fuel oil separately or in combination.

Conclusion – CO Control

The Division has determined that Inland’s proposal to use staged combustion and good combustion practices constitutes BACT. The BACT emission limit has been established as 368 ppm @ 3% O₂ as proposed by Inland. Compliance with the emission limit must be demonstrated through performance testing and monitoring with a CEMS.

Summary – Control Technology Review for CO from the Waste Fuel Boiler

To fulfill the PSD permitting requirements for CO, a BACT analysis was conducted for the Waste Fuel Boiler. The BACT selection for the Waste Fuel Boiler is summarized in Table 21. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database for waste fuel boilers.

Table 21: BACT Summary for the Waste Fuel Boiler

Pollutant	Control Technology	Proposed BACT Limit	Averaging Period
CO	Staged Combustion and Good Combustion Practices	386 ppm @ 3% O ₂	30-day

WASTE FUEL BOILER – VOLATILE ORGANIC COMPOUNDS**Step 1: Identify all Control Technologies**

As with CO, VOC from a boiler is a result of incomplete combustion and VOCs can be controlled through oxidation as well as catalytic technologies.

Option 1: Staged Combustion and Good Combustion Practices
 Option 2: Oxidation (Incineration)
 Option 3: Catalytic Reduction

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness**Table 22: Ranking of Control Technology**

Control Technology Ranking	Control Technology	Control Efficiency
1	Staged Combustion and Good combustion practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate most effective controls and document

Table 4-14 of the PSD application is a list from the RBLC database of VOC emission limits and controls that are in place for wood waste fired boilers. Good combustion practices are the only control methods listed in the database. The new waste fuel boiler will be operated using good combustion practices. Oxidation and catalytic reduction are not practically feasible due to the same economic and environmental impacts discussed for Recovery Furnace 5.

Step 5: Select BACT

The BACT emission limits in the database range from 0.016 to 0.23 lb/MMBtu and control technologies include combustion control, furnace design and operation, and good combustion practices. Currently there is not a NSPS limit for VOC emission from wood waste boilers. Inland proposes VOC BACT to be staged combustion and good combustion practices and an emission rate of 0.05 lb/MMBtu. This proposed BACT emission limit is intended to apply during all operating conditions, which includes the firing of wood waste, sludge, TDF, and fuel oil separately or in combination.

Conclusion – VOC Control

The Division has determined that Inland’s proposal to use staged combustion and good combustion practices constitutes BACT. The BACT emission limit has been established as 0.05 lb/MMBtu as proposed by Inland. Compliance with the emission limit must be demonstrated through performance testing and surrogate monitoring of CO emission levels and boiler combustion temperature.

Summary – Control Technology Review for VOC from the Waste Fuel Boiler

To fulfill the PSD permitting requirements for VOC, a BACT analysis was conducted for the Waste Fuel Boiler. The BACT selection for the waste fuel boiler is summarized in Table 23. The emission limit selected is representative of previous PSD BACT determination levels published in the RBLC database.

Table 23: BACT Summary for Waste Fuel Boiler

Pollutant	Control Technology	Proposed BACT Limit
VOC	Staged Combustion and Good Combustion Practices	0.05 lb / MMBtu

WASTE FUEL BOILER – TOTAL REDUCED SULFUR (including H₂S)

Summary – Control Technology Review for TRS and H₂S from Waste Fuel Boiler WF

Waste Fuel Boiler WF is a potential source of TRS and H₂S gases. The unit will be used to burn HVLC NCGs, which contain TRS gases, should the facility not choose to comply with the Clean Condensate Alternative under the Cluster Rule. By injecting these gases into the Waste Fuel Boiler, most, if not all, will be combusted to form SO₂. Because these gases are controlled to a very high degree (99%+), and no other control technology is considered better, no additional evaluation was considered. The facility will be required to control the TRS gases by at least 99%.

PACKAGE BOILER 2 – PARTICULATE MATTER

Step 1: Identify all Control Technologies

The currently available PM controls include dry ESPs, wet ESPs, cyclones, baghouses, high efficiency wet scrubbers, and burning relatively clean fuels. The theory and operation of each of these control technologies was discussed in detail in previous BACT analyses.

- | |
|---|
| Option 1: Dry Electrostatic Precipitator
Option 2: Wet Electrostatic Precipitator
Option 3: Dry Filtration (Baghouse)
Option 4: Venturi Scrubber
Option 5: Cyclone
Option 6: Low Sulfur Fuel Oil/Natural Gas |
|---|

Step 2: Eliminate Technically Infeasible Options

The combustion of natural gas results in very limited PM emissions and it is thought technically infeasible to collect PM from natural gas combustion. Similarly, fuel oil combustion also results in very low PM emissions. The PM emissions resulting from fuel oil combustion corresponds with the ash content of the fuel oil. Therefore, by burning fuel oil with minimal ash content, PM emissions will be minimized. All options are feasible for fuel oil combustion.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness**Table 24: Ranking of Control Technology**

Control Technology Ranking	Control Technology	Control Efficiency
1	Dry Filtration (Baghouse)	~99.8%
2	ESP	~99.2%
3	Wet Scrubber	~97%
4	Cyclone	~85%
5	Low Sulfur Fuel Oil / Natural Gas ¹	N/a

¹According to AP-42 emission factors, No. 5 fuel can result in the emissions of twice as much PM per gallon as No. 2 fuel oil, and No. 6 fuel oil (assuming 3% sulfur) can result in fifteen times as much PM per gallon as No. 2 fuel oil.

Step 4: Evaluate Most Effective Controls and Document Results

Table 4-15 of the PSD application is a list from the RBLC database of PM emission limits and controls that are in place for natural gas/fuel oil fired boilers. As previously discussed, the only technically feasible, and therefore the most effective means of PM control from a natural gas / fuel oil fired package boiler, is through the use of low sulfur (< 0.5% S) fuel oil.

A baghouse would be the most economical and effective add-on control technology available. Based on the EPA cost estimating spreadsheets and the boiler design, the cost of operating a baghouse on the unit is estimated to be \$281,000 per year. Based on the total PM emission rate of 16.6 tpy and 99% PM collection, this would equate to a cost effectiveness of \$16,900 per ton of PM reduced. Control of PM from this source is therefore not considered cost effective.

The installation and operation of a venturi scrubber or ESP are equally or even more costly. The cost of operating a scrubber is estimated at \$270,000 per year. This is equal to \$16,400 per ton of PM reduced, not including the handling and treatment of wastewater. An ESP would cost an estimated \$630,000 per year, or \$38,000 per ton of PM reduced.

Step 5: Select BACT

The BACT limits in the database range from 0.01 to 0.1 lb/MMBtu. A review of literature for low sulfur oil vendors indicates that the ash content of fuel oil can vary between 0.01% and 0.1% ash. The lowest permitted units would therefore appear to correspond with the lowest range of ash content for fuel oil. However, there is a natural variability of the ash content in fuel oil, and such a limit would not account for this fuel variability. It has not been confirmed that any of the listed units showed compliance with a low PM limit when firing fuel with an ash content on the higher end of the ash content range for low sulfur fuel oil. Because of the natural range of fuel oil ash content, Inland proposes a BACT emission level of 0.05 lb/MMBtu, which is expected to correspond with the mid-range of low sulfur fuel oil ash content.

Conclusion – PM Control

The Division has determined that Inland's proposal to use low sulfur fuel oil to minimize PM emissions constitutes BACT. The BACT emission limit has been established as 0.05 lb/MMBtu, as proposed by Inland. Compliance with the emission limit must be demonstrated through performance testing and fuel monitoring.

Summary – Control Technology Review for PM from Package Boiler 2

To fulfill the PSD permitting requirements for PM, a BACT analysis was conducted for Package Boiler 2. The BACT selection for Package Boiler 2 is summarized in Table 25. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database.

Table 25: BACT Summary for Package Boiler 2

Pollutant	Control Technology	Proposed BACT Limit
PM	Natural Gas/Low Sulfur Fuel Oil	0.05 lb/MMBtu

PACKAGE BOILER 2 – CARBON MONOXIDE

Step 1: Identify all Control Technologies

As previously discussed, the generation of CO emissions is minimized through the use of good combustion practices, oxidation in a secondary unit, or catalytic conversion to CO₂.

Option 1: Good Combustion Practices
 Option 2: Oxidation
 Option 3: Catalytic Conversion

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 26: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Good combustion practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate most effective controls and document

Oxidation and catalytic reduction are not practically feasible due to the same economic and environmental impact issues discussed for Recovery Furnace 5. It is estimated that an RTO (the most economical of the options) would cost \$7,400 per ton of CO reduced. NO_x emissions would also increase with the use of an RTO by about 20 tpy. Any increase in NO_x emissions is highly undesirable because NO_x forms ozone in the presence of heat and sunlight. The North Georgia area is already impacted by excess ozone, so it is important to preserve the 119 ton per year reduction in NO_x emissions achieved by this project. Good combustion practices are the only feasible control methods.

Step 5: Select BACT

Table 4-17 of the PSD application is a list from the RBLC database of CO emission limits and controls that are in place for fuel oil boilers. These limits range from 0.08 to 1.76 lb/MMBTU and control technologies include combustion control, furnace design, and good combustion practices. Currently there is not a NSPS limit for CO emissions for fuel oil boilers. Inland proposes CO BACT to be good combustion practices and an emission limit of 0.20 lb/MMBtu.

Conclusion – CO Control

The Division has determined that Inland's proposal to use good combustion practices to minimize CO emissions constitutes BACT. The BACT emission limit has been established as 0.20 lb/MMBtu as proposed by Inland. Compliance with the emission limit must be demonstrated through performance testing and monitoring furnace oxygen.

Summary – Control Technology Review for CO from Package Boiler 2

To fulfill the PSD permitting requirements for CO, a BACT analysis was conducted for Package Boiler 2. The BACT selection for Package Boiler 2 is summarized in Table 27. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database.

Table 27: BACT Summary for Package Boiler 2

Pollutant	Control Technology	Proposed BACT Limit
CO	Good Combustion Practices	0.20 lb / MMBtu

PACKAGE BOILER 2 – VOLATILE ORGANIC COMPOUNDS

Step 1: Identify all Control Technologies

As with CO, VOC emissions from a boiler are a result of incomplete combustion and VOCs can be controlled through oxidation as well as catalytic technologies.

Option 1: Good Combustion Practices
 Option 2: Oxidation (Incineration)
 Option 3: Catalytic Reduction

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 28: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Good combustion practices	N/a
2	Oxidation (Incineration)	95% - 98%
3	Catalytic Reduction	95% - 98%

Step 4: Evaluate most effective controls and document

Table 4-18 of the PSD application is a list from the RBLC database of VOC emission limits and controls that are in place for fuel oil fired boilers. Good combustion practices are the only control methods in the database. Oxidation and catalytic reduction are not practically feasible due to the same economic and environmental impact issues discussed for Recovery Furnace 5. It is estimated that an RTO (the most economical of the options) would cost \$180,000 per ton of VOC reduced. NO_x emissions would also increase with the use of an RTO by about 20 tpy. Any NO_x increase is undesirable for the reason previously discussed.

Step 5: Select BACT

The BACT emission limits range from 0.0017 to 0.09 lb/MMBtu and control technologies include combustion control, furnace design and operation, and good combustion practices. Inland proposes VOC BACT to be defined as staged combustion and good combustion practices and an emission limit of 0.02 lb/MMBtu.

Conclusion – VOC Control

The Division has determined that Inland's proposal to use good combustion practices to minimize VOC emissions constitutes BACT. The BACT emission limit has been established as 0.02 lb/MMBtu as proposed by Inland. Compliance with the emission limit must be demonstrated through performance testing and monitoring furnace oxygen.

Summary – Control Technology Review for VOC from Package Boiler 2

To fulfill the PSD permitting requirements for VOC, a BACT analysis was conducted for the Package Boiler 2. The BACT selection for Package Boiler 2 is summarized in Table 29. The emission limits selected are representative of previous PSD BACT determination levels published in the RBLC database.

Table 29: BACT Summary for Package Boiler 2

Pollutant	Control Technology	Proposed BACT Limit
VOC	Good Combustion Practices	0.020 lb/MMBTU

LINERBOARD MACHINES P1 and P2 - VOLATILE ORGANIC COMPOUNDS

Step 1: Identify all Control Technologies

The virgin pulp supplied to a linerboard machine has an organic component, which can be emitted to the atmosphere during the linerboard making process. In particular, the drying step can subject the pulp to high temperatures, which can cause some of the organics to be emitted. In addition, some linerboard machines can use additives or cleaners that contain VOCs, which are in turn emitted from the machines.

Though no known linerboard machines use VOC control devices, oxidation of the organics in a RTO or similar device must be considered. Good work practices are the control method primarily utilized for VOC emissions from linerboard machines.

Option 1: Good Work Practices
Option 2: RTO

Step 2: Eliminate Technically Infeasible Options

All options are technically feasible.

Step 3: Ranking Remaining Control Technologies by Control Effectiveness

Table 30: Ranking of Control Technology

Control Technology Ranking	Control Technology	Control Efficiency
1	Good Work Practices	N/a
2	RTO	95% - 98%

Step 4: Evaluate most effective controls and document

Table 4-15 of the PSD application provides a list of the VOC emission limits that are currently in place for linerboard machines in the EPA BACT/LAER Clearinghouse database. As shown, the VOC emission limits vary between 19.75 and 260 pounds per hour VOC. The database shows that the most effective control technology for minimizing the VOC emissions from linerboard machines is good work place operations, which include properly washing the pulp before it is sent to the linerboard machines.

No applications have been identified which utilize oxidation for the control of VOC emission from a paper machine. An economic analysis for installing an RTO was completed to evaluate the potential costs involved. Costs are largely dependent upon the exhaust flow rates from a system, and because of the large size of a paper machine and the large volume of exhaust air, the costs would be significant. The EPA costs spreadsheet for RTOs and estimated flow rates from the paper machine vents (2,300,000 acfm from 64 vents) were used to estimate the costs of operating an RTO on the exhaust gases from the linerboard machines.

An RTO on the linerboard machines would require an estimated capital investment of \$60,000,000 with operating costs of \$14,000,000 per year. Based on the proposed BACT emission rate, this equates to \$16,400 per ton of VOC removed. This addresses only the estimated cost of the control device. The cost of hooding, to collect all emissions, and the necessary ductwork would likely increase these costs significantly. Because a primary function of the paper machine is to remove water from the pulp, this air stream would contain significant amounts of water. This would result in very high fuel costs to heat the water while heating up the organic component of the air stream for destruction. The use of an RTO is therefore not considered BACT because of the high costs, significant increase in energy consumption (natural gas and electricity used by the RTO), and the significant increase in NO_x emissions (estimated at greater than 100 tpy) that would result from the combustion of natural gas in the RTO.

Step 5: Select BACT

The information known about the amount of VOC emitted from linerboard machines utilizing virgin fiber is limited to a stack testing study conducted by the National Council for Air and Stream Improvement (NCASI). The results of this study are documented in NCASI Technical Bulletin 681. NCASI conducted Total Hydrocarbon (THC) Method 25A and Method 18 stack testing of linerboard machines utilizing softwood and hardwood as well as recycled fiber. Inland is proposing a VOC BACT limit of 1.82 pounds per air dried ton pulp (based on the sum of the speciated VOC compounds) for the linerboard machines without controls. This level will be achieved through the good work place practice of properly washing the pulp before it is sent to the machines.

This proposed value is higher on a pound per hour basis than several of the units listed in the EPA BACT/LAER Clearinghouse. However, the sizes of the listed paper machines are not known; therefore they cannot be compared on a pound per air dried ton basis. Furthermore, the proposed BACT level is based on the sum of the speciated VOC compounds. Based on the permit dates, it is expected that the units listed in the RBLC database were based on Method 25A sampling. The tested linerboard machines used as a basis for the proposed BACT level had a Method 25A result of 0.62 pounds per air dried ton pulp, which is significantly lower as compared to the sum of the speciated value.

Conclusion – VOC Control

The Division has determined that Inland’s proposal to use good work practices for linerboard VOC control constitutes BACT. The BACT emission limit has been established as 1.82 pounds per ton air dried pulp as proposed by Inland. Compliance must be assured by making sure that the pulp is properly washed before it is sent to the linerboard machines and by performance testing.

Summary – Control Technology Review for VOC Linerboard Machines P1 and P2

To fulfill the PSD permitting requirements for VOC, a BACT analysis was conducted for Linerboard Machines P1 and P2. The BACT selection for the machines is summarized in Table 31.

Table 31: BACT Summary for Linerboard Machines P1 and P2

Pollutant	Control Technology	Proposed BACT Limit
VOC	Good Work Practices	1.82 lb/adtp

5.0 TESTING AND MONITORING REQUIREMENTS**Recovery Furnace 5:***Testing Requirements*

Recovery Furnace 5 is currently required by the current Title V permit to undergo annual PM and SO₂ stack testing and biennial TRS testing. This testing will continue at the frequency outlined in the current Title V permit. The facility is required by this amendment to conduct initial performance tests for PM, opacity, TRS, H₂S, CO, VOC, and SO₂. The tests are necessary to determine compliance with limits under PSD, 40 CFR 60 Subpart Db, 40 CFR 60 Subpart MM, and 40 CFR 60 Subpart BB at the new, higher, black liquor solids production rate.

Monitoring Requirements

The Permittee is required to continuously monitor TRS, H₂S, furnace oxygen, and opacity in accordance with 40 CFR 52.21, 40 CFR 60 Subpart BB, 40 CFR 63 Subpart MM, and 40 CFR 60 Subpart Db. The continuous monitoring systems are necessary to determine compliance with the limits found in Condition 3.3.6 of this amendment.

The facility is required to monitor secondary current and secondary voltage of the Recovery Furnace ESP on a continuous basis. The total power performance indicator is then calculated from the current and voltage data. The proper operation of the ESP provides a reasonable assurance of compliance with the PM emission limits under 40 CFR 63 Subpart MM and 40 CFR 52.21 found in Conditions 3.3.6 and 3.4.5.

The Permittee is required to monitor the black liquor feed rate and black liquor solids content as fed to the Recovery Furnace. The black liquor records are necessary to demonstrate compliance with the Georgia Rule (e) PM limit in Condition 3.4.5 and the SO₂ PSD limit in Condition 3.3.6. The records are also necessary to determine compliance with the PSD limit for daily black liquor solids in Condition 3.3.62.

The Permittee is required to monitor the amount and type of fuel burned in Recovery Furnace 5 on a continuous basis. The fuel records are necessary to provide a reasonable assurance of compliance with the annual capacity factor limit in Condition 3.3.7 (40 CFR 60 Subpart Db) and the low sulfur fuel oil limit in Condition 3.3.8 (40 CFR 60 Subpart Db). The fuel records are also necessary to determine compliance with the fuel oil firing limit (PSD Avoidance) in Condition 3.3.61.

No direct periodic monitoring is required for CO or VOC emissions. For both pollutants, excess emissions are a result of incomplete combustion. The completeness of combustion is indicated by the furnace oxygen (percent oxygen) value. The facility will therefore be required to continuously monitor furnace oxygen to assure sufficiently complete combustion to demonstrate ongoing compliance with the PSD limits for both pollutants.

CAM Applicability

The monitoring of the secondary power on Source Code ESP5 will meet the requirements of the Compliance Assurance Monitoring (CAM) plan. See Section 3.0 of the Preliminary Determination for a discussion of CAM requirements.

Power Boiler 4:

Testing Requirements

Power Boiler 4 is currently required to undergo annual PM stack testing. This testing will continue at the frequency outlined in the current Title V permit. The facility will be required to undergo initial performance testing for opacity, PM, CO, VOC, and NO_x emissions from Power Boiler 4 when the modifications to unit are completed.

Monitoring Requirements

The Permittee is required to measure the secondary current and secondary voltage for the electrostatic precipitator controlling emissions from this boiler on a continuous basis. The secondary parameters must then be used to calculate the total power once per shift. Monitoring of the secondary parameters and calculating the total power provides a reasonable assurance of compliance with the PM limit found in Condition 3.3.63 (PSD).

The Permittee is required to operate a COMS on the power boiler. The monitor provides a reasonable assurance of compliance with the Georgia Rule (b) opacity limit found in Condition 3.4.11.

The Permittee is required to operate a CEMS for NO_x for Power Boiler 4. The CEMS is necessary to provide a reasonable assurance of compliance with the PSD Avoidance limit in Condition 3.3.63.

Compliance with the PSD and PSD Avoidance limits for SO₂ from Power Boiler 4 will be determined using the calculation method discussed in Condition 6.2.26. The facility will need to continue to monitor fuel type, quantity, and sulfur content to calculate the emissions on both an hourly and a 12-month rolling basis.

The facility is required to operate a continuous monitoring system for furnace oxygen for Power Boiler 4. Furnace oxygen is an indicator of the completeness of combustion. Good combustion practices keep emissions of CO and VOC to a minimum. The furnace oxygen continuous monitor provides a reasonable assurance of compliance with the CO and VOC PSD limits found in Condition 3.3.63.

The Permittee is required to monitor the amount of fuel burned in Power Boiler 4 on a continuous basis. The fuel records are necessary to provide a reasonable assurance of compliance with allowable fuel Condition 3.3.64, the low sulfur fuel oil limit in Condition 3.3.67, the coal sulfur limit in Condition 3.3.66, and the fuel oil burning limit in Condition 3.3.65. All of the limits are for PSD Avoidance.

Package Boiler 2:

Testing Requirements

Package Boiler 2 will be required by this amendment undergo annual CO stack testing. The facility will be required by this amendment to conduct initial performance tests for PM, opacity, CO, VOC, and NO_x. The tests are necessary to determine compliance with limits under PSD and 40 CFR 60 Subpart Db.

Monitoring Requirements

The Permittee is required to use a CEMS to monitor emissions of NO_x. The monitor provides a reasonable assurance of compliance with the limits found in Conditions 3.4.31 and 3.3.56 (40 CFR 60 Subpart Db and Georgia Rule (III)). The facility is also required to continuously monitor opacity in order to demonstrate compliance with the limit in Condition 3.3.68 (Subpart Db).

The Permittee is required to monitor the amount of fuel burned in Package Boiler 2 on a continuous basis. The fuel records are necessary to provide a reasonable assurance of compliance with the allowable fuel / low sulfur fuel oil limit in Condition 3.3.57 (PSD Avoidance). The records are also necessary to demonstrate compliance with the annual fuel oil limit in Condition 3.3.69 (PSD Avoidance).

The Permittee is required to maintain records for each steam-generating unit operating day for Package Boiler 2. These records are necessary to demonstrate compliance with the NO_x limits in 40 CFR 60 Subpart Db.

No periodic monitoring is required for PM. Based on the fuels burned in the boiler (natural gas and very low sulfur fuel oil) violation of this limit is not likely. In addition, monitoring of furnace oxygen provides a reasonable assurance of good combustion practices, which will minimize PM emissions.

No direct periodic monitoring is required for CO or VOC emissions. Good combustion practices keep emissions of CO and VOC to a minimum. Furnace oxygen is an indicator of good combustion. The furnace oxygen continuous monitor provides a reasonable assurance of compliance with the CO and VOC PSD limits found in Condition 3.3.68.

No direct monitoring is required for SO₂ emissions. Based on the sulfur content limit for fuel oil to be burned in the boiler, violation of this limit is highly unlikely. The Permittee is required to maintain records of the sulfur content of the fuel oil burned in the boiler.

Waste Fuel Boiler:*Testing Requirements*

Waste Fuel Boiler WF will be required by this amendment to undergo annual PM stack testing as well as initial performance testing for PM, opacity, CO, VOC, SO₂, and NO_x. The tests are necessary to determine compliance with limits under PSD and Subpart Db. The facility will also have to conduct initial performance tests for HVLC NCG destruction per 40 CFR 63 Subpart S and wastewater sludge mercury emissions per 40 CFR 61 Subpart E.

Monitoring Requirements

The Permittee is required to use CEMS to monitor emissions of NO_x, SO₂, and CO. The monitors provide a reasonable assurance of compliance with the limits found in Conditions 3.3.73 and 3.4.32 (40 CFR 60 Subpart Db, PSD, PSD Avoidance, and Georgia Rule (g)). The facility is also required to continuously monitor opacity in order to demonstrate compliance with the limit in Condition 3.3.73 (40 CFR 60 Subpart Db and 40 CFR 52.21).

The Permittee is required to continuously measure the secondary current and secondary voltage for the electrostatic precipitator controlling emissions from this boiler. The secondary parameters must then be used to calculate the total power. Monitoring of the secondary parameters and the total power provides a reasonable assurance of compliance with the PM limit found in Condition 3.3.73 (PSD).

The Permittee is required to monitor the types of fuels and fuel quantities combusted in the Waste Fuel Boiler. The records are necessary to determine compliance with the fuel burning limits in Condition 3.3.74 (PSD Avoidance).

The Permittee is required to maintain records for each steam-generating unit operating day for Waste Fuel Boiler WF. These records are necessary to demonstrate compliance with the NO_x limits in 40 CFR 60 Subpart Db.

No direct periodic monitoring is required for VOC emissions. The facility will use a two-pronged approach to provide assurance of compliance with the VOC limit. During the VOC initial performance test, the facility must establish a maximum CO concentration that indicates compliance with the VOC limit. The facility will also establish a minimum combustion temperature for the boiler. A reasonable assurance of compliance can be achieved through monitoring these two parameters. Also, if the facility is in compliance with the CO PSD limit, it is highly unlikely that the VOC limit will be exceeded, based on AP-42 emission factors and the emission limits set forth in the permit.

The facility is required to conduct wastewater sludge sampling on a quarterly basis. The facility is then required to use the data to calculate the emission rate of mercury per 24-hour day. The sampling requirements provide a reasonable assurance of compliance with the mercury limit found in Condition 3.3.76 (40 CFR 61 Subpart E).

The facility will also be required to continuously monitor and record the combustion zone temperature of Waste Boiler WF when burning waste gases from the HVLC NCG systems (if this control strategy is implemented). The facility must monitor steam production rate and the number of hours that HVLC gases are burned in the boiler in order to properly calculate SO₂ emissions. This data can also be used to verify compliance with 40 CFR 63 Subpart S, Phase II.

CAM Applicability:

Waste Fuel Boiler WF is subject to the requirements of CAM (compliance assurance monitoring) as specified in 40 CFR Part 64. CAM is applicable to emission units that have potential emissions greater than the major source threshold, located at a major source, use a control device to control a pollutant emitted in an amount greater than the major source threshold for that pollutant, and there is a specific emission standard for that pollutant. The facility uses a control device to control PM emissions (use of the dry ESP) and potential emissions of PM are greater than 100 tpy; therefore, a CAM plan was submitted by Inland. Under the CAM plan submitted for the unit, the mill will monitor secondary power on the ESP to monitor compliance with the PM limit. See Section 3.0 of the Preliminary Determination for a discussion of CAM requirements.

Lime Kilns:

Testing Requirements

The lime kilns will be required by the amendment to undergo retesting for TRS and SO₂ and to perform an initial test for particulate matter under Subpart MM.

Monitoring Requirements

The Permittee is required by the current permit to continuously monitor TRS and O₂ from the Lime Kilns in order to calculate and record 12/24 hour total reduced sulfur averages in accordance with 40 CFR 60 Subpart BB. The data is needed to demonstrate compliance with the TRS limits found in Conditions 3.3.1 and 3.4.3

Pressure drop and scrubbing flow rate for the lime kiln scrubbers are required to be measured and recorded on a continuous basis in accordance with 40 CFR 60 Subpart BB and 40 CFR 63 Subpart MM. The proper operation of the scrubbers provides a reasonable assurance of compliance with the PM and opacity limits found in Conditions 3.3.1, 3.3.59, 3.4.1, and 3.4.2. These limits include those contained in Georgia Rules (b) and (e).

There is no monitoring required for SO₂ from the lime kilns. The regenerated lime acts as a scrubbing agent for the pollutant; therefore the likelihood of violation of the PSD limits in Conditions 3.3.1 and 3.3.2 is minimal.

In order to collect operational data for the kilns, the facility is required to monitor and record the lime mud production rate and the lime mud solids content.

Smelt Tank 5:

Testing Requirements

The smelt tank will be required to undergo retesting for TRS and SO₂. Also, an initial performance test is required for PM under Subpart MM.

Monitoring Requirements

The Permittee is required to continuously monitor the pressure drop and scrubbing flow rate for the smelt tank scrubber in accordance with 40 CFR 63 Subpart MM. The proper operation of the scrubber provides a reasonable assurance of compliance with PM opacity limits found in Conditions 3.3.11.a and 3.4.9 (40 CFR 63 Subpart MM, PSD, and Georgia Rule (b)). Also, because the scrubbing agent is caustic, the operation of the scrubber also provides a reasonable assurance of compliance with the SO₂ and TRS limits in Conditions 3.3.11 and 3.4.8 (PSD and Georgia Rule (gg)).

HVLC NGCs:

If the facility does not comply with the Clean Condensate Alternative allowed by the Cluster Rule, the HVLC gases will be combusted in the Waste Fuel Boiler. There are no monitoring requirements under the Cluster Rule for the introduction of the gases with the primary fuel or into the flame zone. Under PSD, the facility is required to achieve 99% destruction efficiency for these TRS gases. The facility is required to monitor combustion temperature to provide a reasonable assurance that the minimum destruction efficiency is achieved.

Linerboard Machines P1 and P2:*Testing Requirements*

The amendment requires the facility to conduct performance testing for the linerboard machine VOC limit under Condition 3.3.78.

Monitoring Requirements

The facility is required to develop and submit for approval a set of good work practice standards for the handling of pulp so that VOC emissions at the paper machines are minimized.

6.0 AMBIENT AIR QUALITY REVIEW

An air quality analysis is required to determine the ambient impacts associated with the proposed mill optimization project. The purpose of the air quality analysis is to demonstrate that emission increases or decreases from the proposed project, will not cause or contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD increment in a Class I or Class II area. This analysis is required for each pollutant emitted in an amount over the PSD significant emission rate threshold. As shown in Table 1 of this document, PM/PM₁₀, CO, TRS, and H₂S exceed the PSD significant threshold. Thus an air quality analysis was performed for these pollutants. Compliance with any NAAQS or PM increment is based on the modeled ambient impact caused by the applicant's proposed emissions as well as those sources surrounding the mill within the impact area.

Modeling Basis:

The Rome Linerboard Mill is located off of a section of Mays Bridge Road in Rome, Georgia between Turner Bend Road and State Route 20. The facility owns property on both sides of the road. During the development of this project, the facility determined that the modeling indicated an exceedance of the 24-hour NAAQS for PM/PM₁₀ on and along the road. The facility therefore assume that the public is exposed to pollutant concentrations on the road 24 hours per day and 365 days per year because it is open to the public.

The facility considers this optimization project key to the mill's survival and is aware that a permit cannot be issued when the modeling for the modification indicates a NAAQS exceedance. The mill therefore began discussions with the Floyd County Commission to close the Inland section of Mays Bridge Road before submitting the permit application to the EPD. It is the EPD's understanding that the County Commission agreed to close the road provided that EPD modeling duplicated the results found by Inland's consultant. The EPD Data and Modeling Unit has confirmed that the modeling for this modification project shows a 24-hour PM/PM₁₀ concentration of 181 ug/m³ on the road. This is above the standard of 150 ug/m³.

The modeling results presented in this preliminary determination were obtained based on the understanding that the section of Mays Bridge Road in question will be closed to the public. A requirement to this effect is included in Part 6.0 of the permit amendment. It should be noted, however, that the decision regarding the closure of Mays Bridge Road to the public rests with the Floyd County Commission.

Monitoring:

EPD maintains a state and local ambient monitor (SLAM) for PM in Floyd County in the vicinity of the Rome Linerboard Mill. The ambient air quality in Floyd County can be adequately estimated by using background concentrations for similar areas in Georgia. The existing network of Georgia monitors has been determined to be able to provide representative data that may be used in place of pre-construction monitoring by the company.

Modeling:

In general, the EPD assesses the ambient impact of a source through the use of mathematical dispersion models. The models are based on the assumption that the dispersion of pollutants is primarily a function of wind speed and direction, atmospheric stability conditions, and the characteristics of the effective point discharge of the exhaust plume. To predict ambient air concentrations, the models simulate the plume exhausting from the stack, rising a certain distance into the atmosphere, leveling off, and continuing downwind over relatively flat terrain. The concentrations of the pollutants are assumed to have a Gaussian distribution about the downwind axis centerline of the plume.

In analyzing the air quality impact of these modifications, the EPA Industrial Source Complex Short-Term Version 3 (ISCST3) model was used for all PSD modeling results presented in the preliminary determination. ISCST3 is a Gaussian plume dispersion model that estimates hour-by-hour ground-level concentrations of emissions from an elevated source. The model provides maximum 24-hour and annual average concentrations for receptors located on many grid types around the source for various downwind distances. The model also takes into account the effect of downwash caused by nearby buildings and structures.

For the air quality analyses, National Weather Service (NWS) meteorological data from the years 1974-1978 for Atlanta, Georgia were used as surface data and the same years for Athens, Georgia were used as upper air data. EPA's Building Profile Input Program (BPIP) was used to calculate flow vectors based on 36 possible wind directions in order to allow for building downwash. The modeling included all stacks with applicable emission changes resulting from the production increase, and the individual stack parameters were used in calculating building downwash using BPIP.

Increment Consumption:

The PSD regulations establish specific maximum allowable increases in ambient concentrations (or increments) for PM₁₀, NO_x, SO₂, and CO for all areas in compliance with the NAAQS. All areas of the country are categorized as a function of overall use. The regulations were designed to prevent significant air quality deterioration by specifying allowable incremental changes in PM₁₀, NO_x, SO₂ and CO concentrations within each area category. The area categories are defined below:

Class I – Those areas where almost any deterioration of current air quality is undesirable, and little or no industrial development would be allowed (e.g., national parks, wilderness areas).

Class II – Those areas where moderate, well-controlled energy or industrial growth is desired without air quality deterioration up to the national standards (all attainment areas not categorized as Class I were initially designated Class II).

Class III – Those areas where substantial energy or industrial development is intended, and where modest increases in ambient concentrations above Class II increments, but below national standards, would be allowed (designation to Class III must follow strict redesignation procedures).

The Floyd County area and all other attainment areas in Georgia, not designated as Class I areas, are Class II areas. The Class I areas nearby the facility are Cohutta Wilderness, Sipsey NWA, Joyce Kilmer NWA, and The Smokey Mount National Wildlife Area.

The first step in the air quality analysis was to determine whether the incremental ambient impacts due to new emissions from the project were greater than U.S. EPA-prescribed Modeling Significance Levels. This "significance analysis" determined whether the Inland mill could forgo a full-scale impact analysis to demonstrate compliance with the NAAQS and PSD Class II Increments.

The results of the significance analysis conducted for the Rome Linerboard mill expansion project are summarized in Table 32. The impacts due to the total project emissions of PM₁₀, CO, TRS, and H₂S were calculated in this analysis using the ISCST3 dispersion model. Table 32 shows the highest concentration modeling result for each pollutant. The complete modeling analysis results are located in Section 5 of the Permit Application. The EPD modeling results are found in Appendix C of this document.

Table 32. Significant Impact Levels and Significant Monitoring Concentrations

Pollutant	Averaging Period	PSD Significant Impact Level (ug/m ³)	Monitoring Concentration Level (ug/m ³)	Modeled Concentration (ug/m ³)	Notes
PM ₁₀	24-Hour	5	10	67.2	Additional modeling needed
	Annual	1	--	8.8	Additional modeling needed
CO	1-Hour	2,000	--	1197	No further modeling needed
	8-Hour	500	575	447	No further modeling needed
H ₂ S	1-Hour	--	0.2	27.1	No further modeling needed
TRS	1-Hour	--	10	560	No further modeling needed

As shown in Table 32, the project's impact is below the significant impact level (SIL) for both CO averaging periods; therefore no further modeling is required for this pollutant. The maximum CO concentration is below its corresponding pre-construction monitoring levels; therefore no monitoring is required for CO.

The maximum PM₁₀ concentration did exceed its SIL; therefore refined modeling is required for the pollutant. PM₁₀, H₂S, and TRS did exceed their pre-construction monitoring levels. A state local area monitor (SLAM) for PM₁₀ is close enough to be considered representative of background emission, therefore pre-construction monitoring is not considered necessary for PM₁₀. The mill currently has on-site TRS monitors; therefore no additional monitoring of that pollutant is considered warranted. H₂S is a component of TRS; therefore pre-construction monitoring of that pollutant was also not considered necessary.

Because the modeled PM₁₀ concentration increases exceed the SILs, further modeling is required under PSD to ensure that the Class II PSD increment for the area is not consumed. This further evaluation must include all sources within 50 kilometers of the project's area of impact. The area of impact is determined by the farthest distance from the site that exceeded the SIL. This distance was 14 km; therefore, along with the modeled sources, all increment-consuming sources within 64 km (14 km + 50 km) of the Rome mill were included in the modeling. Georgia EPD has provided (via our web page) Inland Rome with a list of all the increment consuming sources that qualify.

Table 33. Class II PSD Increment Impacts

Pollutant	Averaging Period	PSD Increment (ug/m ³)	Modeled Concentration (ug/m ³)	Notes
PM ₁₀	24-Hour	30	15.7	Includes all sources within 64 km
	Annual	17	1.7	Includes all sources within 64 km

As shown in Table 33, the modeled impacts of PM₁₀ are below the PSD increment. Given this, the proposed project will comply with the PSD Class II Increment analysis.

Ambient Air Quality:

The NAAQS are established as ambient ceilings applicable to the entire country, and they must be attained and maintained. PSD requires that any pollutant that has predicted significant impacts due to the modification alone must be evaluated for NAAQS compliance. Table 32 shows that PM₁₀ was above the significant impact level; therefore it must be evaluated further. The ISCST3 model was used with the addition of all contributing sources within 64 km of the Inland mill. The background concentrations, as determined by the EPD, were added to the modeled results. In all cases, the modeled impacts are below the associated NAAQS limits.

Table 34. Ambient Air Quality Impacts

Pollutant	Averaging Period	Modeled Conc. (ug/m ³)	Background Conc. (ug/m ³)	Combined Conc. (ug/m ³)	NAAQS (ug/m ³)
PM ₁₀	24-Hour	84.1	38	122.1	150
	Annual	14.7	20	36.8	50

Class I Evaluation:

The impacts for the proposed project on the Class I area within 100 km of the Rome Linerboard Mill were also evaluated. Since the mill is located roughly 98 km from the Cohutta Wilderness Class I Area in North Georgia, a modeling evaluation of Cohutta was completed. This analysis was completed per discussions with the Cohutta Wilderness Area and as outlined in the “Air Quality Related Values Status and Information Needs for PSD Class I Area Impact Analysis (per Flag)” dated May 31, 2001 and the Federal Land Managers’ Air Quality Related Values Workgroup (FLAG) Phase I Report” dated December 2000.

The purpose of the Class I Area modeling analysis is to demonstrate that the new project will not consume more than the available Class I PSD Increments in the Class I Area. A significance analysis was conducted, first to determine whether the project could be expected to have a significant impact in the Class I Area. Table 35 details the findings of the modeling for the Cohutta Wilderness Class I Area for the proposed project. PM and SO₂ emission at the Cohutta Wilderness Class I Area are below the EPA Class I screening levels and no further analysis is required.

Table 35. Class I Area Evaluation

Pollutant	Averaging Period	AQRV Level (ug/m ³)	Modeled Conc. (ug/m ³)	Notes
PM ₁₀	24-Hour	0.32	0.18	No additional modeling required
	Annual	0.16	0.013	No additional modeling required
SO ₂	3-Hour	1	0.086	No additional modeling required
	24-Hour	0.2	0.022	No additional modeling required
	Annual	0.08	0.0013	No additional modeling required

Complex Terrain:

Because some of the area surrounding the mill is classified as complex terrain (terrain which is equal to or exceeds the lowest stack height of the sources being modeled), a complex terrain modeling analysis was completed. The complex terrain modeling was based on the EPA guidance memo on complex terrain modeling “Complex Terrain Modeling Procedures” dated May 19, 1999. Following the guidance, screening modeling was completed in the default mode for complex terrain that takes the greater of the applicable predictions from the complex and simple terrain algorithms. If the resulting concentrations are below the SIL, no further air quality analysis (modeling to demonstrate compliance with the NAAQS or PSD Increment) is required. As demonstrated, the project’s impact is below the SILs for CO, however above the SIL for PM₁₀; therefore, complex terrain analysis is required for PM₁₀. A further evaluation of the PM₁₀ modeling found the complex terrain algorithms were the controlling algorithm in the complex terrain, and therefore a CTSCREEN modeling analysis was required. The CTSCREEN runs were completed using identical source emission data that was utilized in the ISCST3 NAAQS and PSD Increment models. All modeled hills showed compliance with both the NAAQS and PSD Increment standards. This was verified by the EPD.

Air Toxics:

There are no applicable NAAQS or specific Georgia ambient air standards for the non-criteria pollutants listed in Table 1. Impacts from each of the pollutants listed Table 5-18 of the permit application were analyzed using the EPD Guidance for Ambient Impact Assessment of Toxic Air Pollutant Emissions (referred to as the Georgia Air Toxics Guideline; Version June 21, 1998). The Georgia Air Toxics Guideline is a guide for estimating the environmental impact of sources of toxic air pollutants.

A toxic air pollutant is defined as any substance that may have an adverse effect on public health, excluding any specific substance that is covered by a State or Federal ambient air quality standard. The EPA SCREEN3 computer screening dispersion model was used to predict the maximum 15-minute, 24- hour, and annual average ground level concentration (referred to as Maximum Ground Level Concentration (MGLC)) for each pollutant. Each MGLC was compared to its respective Acceptable Ambient Concentration (AAC). The basis for calculation of AAC comes from the pollutant toxicity rating systems described in the Georgia Air Toxics Guideline (dated June 1998). If the screening analysis did not demonstrate an acceptable MGLC, the ISCST3 refined dispersion model was used to predict a more accurate MGLC.

The SCREEN3 evaluation demonstrated that maximum impacts of toxic air pollutants due to the proposed project are less than the maximum AAC levels for all compounds except acrolein, benzene, arsenic, chloroform, methyl mercaptan, formaldehyde, hexavalent chromium, and hydrogen sulfide. As per the Georgia Guidelines, ISCST3 modeling was completed for those pollutants that were not screened out through the SCREEN3 program. Based on EPD's analysis, the predicted MGLC for each applicable pollutant is below its Georgia EPD AAC. Appendix C of this document contains the toxic modeling results.

Class I Visibility Analysis:

Emissions from certain sources can create visible, defined plumes that are noticeable to the casual observer. An exhaust plume visibility analysis was performed for this project to assure that the emissions from the project do not create a noticeably visible plume in a Class I Area.

The visibility analysis breaks up the evaluation approach into two groups for evaluation: Sources that are within 50 km of the Class I Area and sources which are greater than 50 km from the Class I Area. In the case of the Inland mill, the distance from the mill to the closest Cohutta Class I Area boundary is 98 km; therefore the "greater than 50 km" method was utilized in order to determine the project's impact on Cohutta. The goal of this approach is to utilize the Calpuff model to determine the change from the specified reference levels for the Class I Area and compare the change with the prescribed threshold values.

Under the Cohutta Class I Area guidance, if the proposed project results in a percent change in B-extinction which is always less than 5 %, the project can proceed without further analysis. This analysis found a maximum B_{ext} for the 5 years of modeled data of 0.88%, which is below the 5% level. Therefore no further analysis was completed.

In addition to the visibility analysis, an evaluation of the incremental consumption of particulate matter on Cohutta was also completed. In addition to providing visibility impacts, the Calpuff model provided peak concentrations of the pollutants modeled. Current EPA guidance indicates that if the increment consumption is less than the PM and SO₂, screening levels then no additional modeling is required. As shown in Table 35 the concentrations are below these levels for all pollutants; therefore no additional modeling evaluation was necessary for increment consumption at Cohutta.

Class II Visibility Analysis:

A Class II visibility analysis was evaluated for the nearest Class II area to the facility utilizing the VISCREEN model. The nearest Class II area is the Richard B. Russell Airport, which is approximately 18.4 km from the Inland facility.

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. For this project, visibility analysis was performed using the latest version of the EPA VISCREEN model according to the guidelines published in the *Workbook for Plume Visual Impact Screening and Analysis* (EPA- 450/4-88-015). The VISCREEN model is designed specifically to determine whether a plume from a facility may be visible from a given vantage point. VISCREEN performs visibility calculations for two assumed plume- viewing backgrounds (horizon sky and a dark terrain object). The model assumes that the terrain object is perfectly black and located adjacent to the plume on the side of the centerline opposite the observer.

The VISCREEN visibility model was set-up to model the increase in particulate emissions from the facility based on the worst case plume dispersion characteristics. The worst case dispersion characteristic was developed using the method described in the manual for the VISCREEN Model. To obtain the worst-case meteorological conditions, it is necessary to determine the dispersion condition (wind speed and stability class of wind in the direction of the Class II area) that has a cumulative probability of 1%. This 1% level is a conservative approach that is expected to represent the worst case plume emissions on the day when the meteorological conditions are best for maximizing visual plume impacts. The 1% level corresponded with a wind speed of 3 meters per second and a stability class of F.

For both views inside and outside the Class II area, calculations are performed by the model for the two assumed plume-viewing backgrounds. The VISCREEN model output shows separate tables for inside and outside the Class II 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 follows:

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 of 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 generally considered satisfactory if ΔE and Contrast are less than critical values of 2.0 and 0.05, respectively. Both of these critical values are Class I, not Class II, area thresholds. The Division has reviewed the VISCREEN results presented in the permit application and has determined that the visual impact criteria are met both inside and outside the Richard B. Russell Airport. ΔE and Contrast have been determined to be 0.52 and 0.005, respectively.

7.0 ADDITIONAL IMPACT ANALYSES

PSD requires an analysis of impairment to visibility, soils, and vegetation that will occur as a result of a modification to the facility and an analysis of the air quality impact projected for the area as a result of the general commercial, residential, and other growth associated with the proposed project.

Visibility:

Visibility impairment is any perceptible change in visibility (visual range, contrast, atmospheric color, etc.) from that which would have existed under natural conditions. Poor visibility is caused when fine solid or liquid particles, usually in the form of volatile organics, nitrogen oxides, or sulfur oxides, absorb or scatter light. This light scattering or absorption actually reduces the amount of light received from viewed objects and scatters ambient light in the line of sight. This scattered ambient light appears as haze.

Another form of visibility impairment in the form of plume blight occurs when particles and light-absorbing gases are confined to a single elevated haze layer or coherent plume. Plume blight, a white, gray, or brown plume clearly visible against a background sky or other dark object, usually can be traced to a single source such as a smoke stack.

Inland presented visibility impact analyses in Section 6.0 of this document as discussed in the previous section. The results of these analyses showed that the proposed project should have no perceptible impact on visibility within the Class I Area of interest, the Cohutta Wilderness, or in any of the Class II Areas of interest.

Soils and Vegetation:

No sensitive soil types are known to exist within the significant impact area of the project. Moreover, the areas of maximum impact are generally cultivated or forested and demonstrate no obvious sensitivity to industrial air emissions.

Since ground level concentrations of PM, NO_x, and CO are not expected to increase by a significant degree as a result of this project, the impacts on soil and vegetation are predicted to be insignificant. There are currently no known adverse impacts on local environment from Inland's emissions and no discernible changes are expected to result from the proposed modifications to Inland's operations.

Growth:

The modification to the Inland Mill is not expected to cause any related industrial or commercial growth that would have an impact on local ambient air quality.

8.0 EXPLANATION OF DRAFT PERMIT CONDITIONS

The permit requirements for this proposed facility are included in draft Permit Amendment No. 2631-115-0021-V-01-4.

Part 1.0 Facility Description

The EPD has provided a description of the modifications to the facility in Section 1.3 of the amendment.

Part 2.0 Requirements Pertaining to the Entire Facility

There are no modifications or additions to Section 2.0 of the permit.

Part 3.0 Requirements for Emission Units

Condition 3.2.1 has been modified. The condition limits the amount of linerboard the facility can produce. The limit has been increased from 815,852 scaled tons during any twelve consecutive months to 949,000 scaled tons. This was previously a PSD Avoidance condition. The citation has been changed to 40 CFR 52.21.

Condition 3.2.2 has been deleted. The condition referred to equipment associated with the Power Island, which will not be built.

Condition 3.3.1.b has been modified. The condition previously limited PM emissions from Lime Kiln 1A to 0.13 grains per dscf when burning fuel oil as required by 40 CFR 60 Subpart BB. The condition now limits the emissions to 0.106 grains per dscf based on the bubble limit calculated per 40 CFR 63 Subpart MM. Subpart MM also limits emissions from the pulp mill chemical recovery system beyond what was required by 40 CFR 60 Subpart BB.

Condition 3.3.1.d has been modified. The allowable emission rate of SO₂ from Lime Kiln 1A has been increased from 8.97 pounds per hour to 9.79 pounds per hour. Reference to the 1986 mill expansion PSD has been deleted from the citation. The facility has demonstrated that the ambient concentration of SO₂ does not increase due to this change because of the shutdown of some equipment and the new SO₂ limits imposed on other equipment.

Condition 3.3.2 has been modified. The allowable emission rate of SO₂ from Lime Kiln 2A has been reduced from 13.65 pounds per hour to 9.04 pounds per hour. The limit has been lowered as per a request by the facility. Reference to the 1986 mill expansion PSD has been deleted from the citation.

Conditions 3.3.3 through 3.3.5 have been deleted. The conditions referred to requirements for Lime Kiln 3A, Recovery Furnace 3, and Recovery Furnace 4, which will all be decommissioned.

Condition 3.3.6.a has been modified. The condition previously limited PM emissions from Recovery Furnace 5 to 0.044 grains per dscf. The condition now limits emissions to 0.021 grains per dscf. This is the limit set by the PSD BACT analysis and 40 CFR 63 Subpart MM.

Condition 3.3.6.b has been modified. The condition limits the emission of TRS from Recovery Furnace 5 to 5 ppm. The citation has been updated to indicate the limit is also a result of the PSD BACT analysis.

Condition 3.3.6.c has been modified. The allowable emission rate of SO₂ from Recovery Furnace 5 has been increased from 328 pounds per hour to 486 pounds per hour. Reference to the 1986 mill expansion PSD has been deleted from the citation. The facility has demonstrated that the ambient concentration of SO₂ does not increase due to this change because of the shutdown of some equipment and the new sulfur SO₂ limits imposed on other equipment.

Condition 3.3.6.f has been added to the permit. The condition limits the emission of CO from Recovery Furnace 5 to 650 ppm corrected to 8 percent oxygen while burning black liquor solids. The limit is the result of the PSD BACT analysis.

Condition 3.3.6.g has been added to the permit. The condition limits the emission of VOC from Recovery Furnace 5 to 0.040 pounds per million BTU heat input of black liquor solids. The limit is the result of the PSD BACT analysis.

Condition 3.3.6.h has been added to the permit. The condition limits the emission of H₂S from Recovery Furnace 5 to 4 ppm corrected to 8 percent oxygen. The limit is the result of the PSD BACT analysis.

Condition 3.3.6.i has been added to the permit. The condition limits the emission of CO from Recovery Furnace 5 to 0.20 pounds per million BTU heat input when firing fuel oil alone. The limit is the result of the PSD BACT analysis.

Condition 3.3.6.j has been added to the permit. The condition limits the emission of VOC from Recovery Furnace 5 to 0.02 pounds per million BTU heat input when firing fuel oil alone. The limit is the result of the PSD BACT analysis.

Condition 3.3.8 has been modified. The condition requires the facility to burn only “very low sulfur oil” in Recovery Furnace 5 as required by 40 CFR 60 Subpart Db. The definition of very low sulfur fuel oil has been added to the condition.

Conditions 3.3.9 and 3.3.10 have been deleted. The conditions referred to requirements for Smelt Tanks 3 and 4, which will be decommissioned.

Condition 3.3.11.a has been modified. The citation has been updated to include 40 CFR 63 Subpart MM for the PM limit for Smelt Tank 5.

Condition 3.3.11.b has been modified. The allowable SO₂ emission rate from Smelt Tank 5 has been reduced from 6.59 pounds per hour to 1.77 pounds per hour. The limit has been lowered as requested by the facility. Reference to the 1986 mill expansion PSD permit has been removed.

Condition 3.3.12 has been deleted. The condition referred to requirements for Power Boilers 1 and 3, which will be decommissioned.

Condition 3.3.13 has been modified. Reference to Power Boilers 1, 2, and 3 have been removed. The emission limit has been changed to a PSD limit solely for Power Boiler 4. The allowable SO₂ PSD emission rate from the Power Boiler has been set at 1,130.0 pounds per hour (the allowable emission rate for all four power boiler was previously 1,516.3 pounds per hour). A 12-month rolling limit of 3,827 tons of SO₂ has also been added to the condition for the purposes of PSD Avoidance.

Conditions 3.3.14 through 3.3.35 have been deleted. The conditions referred to requirements for the Power Island equipment, which will not be built.

Condition 3.3.36 has been modified. Lime Kiln 3A has been removed from the condition because it will be decommissioned.

Condition 3.3.39 has been deleted. The condition allowed the facility to burn used oil, provided that it met certain criteria without dilution. The citation for the condition was 40 CFR 279.11 – Standards for the Management of Used Oil. The condition has been deleted because 40 CFR 279 is not an air regulation and therefore does not belong in an air quality permit. This permit change has not been requested by the facility; however, the Division finds it necessary to correct this error during this permitting action to avoid difficulties in the future.

Condition 3.3.41 has been modified. The condition requires the facility to reduce HAP emissions from the LVHC system by incineration according to 40 CFR 63 Subpart S. Reference to Lime Kiln 3A, which is to be decommissioned, has been removed from the condition.

Condition 3.3.42 has been modified. The condition refers to the control requirements for Phase II of the Cluster Rule. The facility has determined that HVLC gases will be controlled with the Waste Fuel Boiler or the facility will comply with the Clean Condensate Alternative. The condition has been modified to add reference to the Waste Fuel Boiler and to add details concerning the Clean Condensate Alternative. The permit application includes the emissions from both scenarios.

Condition 3.3.57 has been modified. Previously the condition allowed the facility to burn only natural gas in Package Boiler 2. The condition has been modified to allow the combustion of very low sulfur fuel oil as well. This will allow the unit to operate continuously instead of in a backup capacity only. The citation has been updated to indicate that Georgia Rule 391-3-1-.02(2)(g) is subsumed by the requirement that the facility combust only very low sulfur fuel oil. The definition of very low sulfur fuel oil has been added to the condition.

Condition 3.3.58 has been deleted. The condition allowed the facility to operate Package Boiler 2 only when one of the Power Boilers or Recovery Boilers was down. This allowed the facility to continue to operate with sufficient steaming capacity. The boiler will be permitted to operate full time; therefore the condition is no longer necessary.

Condition 3.3.59 has been added to the permit. The condition limits the emission of PM from Lime Kiln 2A to 0.155 grains per dscf corrected to 10 percent oxygen. The limit is a result of the bubble limit calculated in accordance with 40 CFR 63 Subpart MM.

Condition 3.3.60 has been added to the permit. The condition requires the facility to comply with all applicable parts of 40 CFR 60 Subpart Db for the operation of Recovery Furnace 5.

Condition 3.3.61 has been added to the permit. The condition limits the fuel oil firing in Recovery Furnace 5, when it is not being co-fired with black liquor solids, to 1.3 million gallons per any twelve consecutive month period. Testing on similar units has shown that SO₂ emissions do not increase from recovery furnaces when co-firing with black liquor solids. For this reason, the fuel oil limit does not include fuel oil being fired with black liquor solids. This limit, along with the requirement to burn fuel oil with a maximum sulfur content of 0.5% sulfur, will assure that SO₂ emissions from Recovery Furnace 5 will be at or below the maximum level in the permit application.

Condition 3.3.62 has been added to the permit. The condition limits the amount of black liquor solids that can be processed in Recovery Furnace 5 to 5.3 million pounds per day. The limit is required for PSD Avoidance.

Condition 3.3.63.a has been added to the permit. The condition limits PM emissions from Power Boiler 4 to 0.07 lb per million Btu heat input. The limit is the result of the PSD BACT analysis.

Condition 3.3.63.b has been added to the permit. The condition limits CO emissions from Power Boiler 4 to 300 ppm corrected to three percent oxygen. The limit is the result of the PSD BACT analysis.

Condition 3.3.63.c has been added to the permit. The condition limits NO_x emissions from Power Boiler 4 to 0.50 pounds per million BTU heat input. The limit is the result of PSD Avoidance.

Condition 3.3.63.d has been added to the permit. The condition limits VOC emissions from Power Boiler 4 to 0.01 pounds per million BTU heat input. The limit is the result of the PSD BACT analysis.

Condition 3.4.64 has been added to the permit. The allows the facility to burn only coal, No. 2 or No. 5 fuel oil, or used oil in Power Boiler 4. The basis for this condition is 40 CFR 52.21 Avoidance.

Condition 3.3.65 has been added to the permit. The condition limits the amount of fuel oil that can be fired in Power Boiler 4 during any 12 months to 35,352,857 gallons. This limit is a requirement of PSD Avoidance.

Condition 3.3.66 has been added to the permit. The condition limits the sulfur content of coal burned in Power Boiler 4 to 1.29 percent, by weight. The condition is a requirement of PSD Avoidance.

Condition 3.3.67 has been added to the permit. The condition limits the sulfur content of fuel oil burned in Power Boiler 4 to 0.5 percent, by weight. The condition is a requirement of PSD Avoidance.

Condition 3.3.68.a has been added to the permit. The condition limits the emission of PM from Package Boiler 2 to 0.050 pounds per million BTU heat input. This limit is the result of the PSD BACT analysis. The limit subsumes the existing particulate matter allowable under Georgia Rule 391-3-1-.02(2)(d).

Condition 3.3.68.b has been added to the permit. The condition limits the opacity of emissions from Package Boiler 2 to less than 20 percent except for one six minute period per hour of not more than 27 percent when firing fossil fuel. This is a requirement of 40 CFR 60 Subpart Db and Georgia Rule 391-3-1-.02(2)(d). The unit is now subject to the opacity limit under Subpart Db due to the addition of oil burners.

Condition 3.3.68.c has been added to the permit. The condition limits the emission of CO from Package Boiler 2 to 0.20 pounds per million BTU heat input. The limit is the result of the PSD BACT analysis.

Condition 3.3.68.d has been added to the permit. The condition limits the emission of VOC from Package Boiler 2 to 0.020 pounds per million BTU heat input. The limit is the result of the PSD BACT analysis. The unit was not previously limited for VOC emissions.

Condition 3.3.68.e has been added to the permit. The condition limits the emission of SO₂ from Package Boiler 2 to equal to or less than 110 pounds per hour. The limit is a requirement of PSD Avoidance.

Condition 3.3.69 has been added to the permit. The condition limits the amount of fuel oil fired in Package Boiler 2 to no more than 30 million gallons per any twelve months. This limit is a requirement of PSD Avoidance.

Condition 3.3.70 has been added to the permit. The condition requires the new Waste Fuel Boiler to comply with all applicable requirements of 40 CFR 60 Subpart Db.

Condition 3.3.71 has been added to the permit. The condition requires the facility to burn only "very low sulfur oil" in the Waste Fuel Boiler. This is a requirement found in 40 CFR 60 Subpart Db and is a requirement of 40 CFR 52.21 Avoidance for SO₂ emissions.

Condition 3.3.72 has been added to the permit. The condition limits the fuel to be burned in the Waste Fuel Boiler to wood residue, waste wood, No. 2 Fuel oil, used oil, tire derived fuel, waste water sludge, recycle fiber waste, HVLC NCGs, and recovered boiler ash. This is a requirement of 40 CFR 52.21 Avoidance.

Condition 3.3.73.a has been added to the permit. The condition limits the emission of PM from the Waste Fuel Boiler to 0.025 pounds per million BTU heat input. This limit is the result of the PSD BACT analysis. The limit is also equal to the proposed PM limit for future MACT rule 40 CFR 63 Subpart DDDDD.

Condition 3.3.73.b has been added to the permit. The condition limits the emission of NO_x from the Waste Fuel Boiler to 0.20 pounds per million BTU heat input. The limit is a requirement of 40 CFR 60 Subpart Db.

Condition 3.3.73.c has been added to the permit. The condition limits the emission of CO from the Waste Fuel Boiler to 368 ppm corrected to 3 percent oxygen. The condition is a result of the PSD BACT analysis.

Condition 3.3.73.d has been added to the permit. The condition limits the emission of VOC from the Waste Fuel Boiler to 0.05 pounds per million BTU heat input. The condition is a result of the PSD BACT analysis.

Condition 3.3.73.e has been added to the permit. The condition limits the emission of SO₂ from Waste Fuel Boiler WF to equal to or less than 1,170 tons per any twelve month consecutive period. The limit is a requirement of PSD Avoidance.

Condition 3.3.73.f has been added to the permit. The condition limits the opacity of emissions from the Waste Fuel Boiler to 10 percent except for one six minute period per hour of not more than 27 percent when fossil fuel is fired. This is a requirement of 40 CFR 60 Subpart Db, 40 CFR 52.21, and Georgia Rule 391-3-1-.02(2)(d).

Condition 3.3.74 has been added to the permit. The condition limits the burning of tire derived fuel in the Waste Fuel Boiler to 80 tons per day and the burning of wastewater sludge to 30 tons per day. This is a requirement of 40 CFR 52.21 Avoidance.

Condition 3.3.75 has been added to the permit. The condition requires the facility to comply with all applicable provisions of 40 CFR 61 Subpart E for Waste Fuel Boiler WF. The boiler is subject to this rule because it burns wastewater sludge.

Condition 3.3.76 has been added to the permit. The condition limits the emission of mercury from Waste Fuel Boiler WF to equal to or less than 7.1 pounds per 24-hour period while burning wastewater sludge. The limit is a requirement of 40 CFR 61 Subpart E.

Condition 3.3.77 has been added to the permit. The condition requires the facility to achieve at least 99% destruction of TRS gases fed to the Waste Fuel Boiler. This is a requirement of the PSD BACT analysis.

Condition 3.3.78 has been added to the permit. The condition limits the emission of VOC from Linerboard Machines P1 and P2 to 1.82 pounds per air dried ton pulp. This is a requirement of the PSD BACT analysis.

Condition 3.3.79 has been added to the permit. The facility must comply with the applicable requirements of 40 CFR 63.50 through 63.56. The facility is potentially subject to 40 CFR 63 Subpart DDDDD, which has not yet been promulgated.

Condition 3.3.80 has been added to the permit. The condition describes the periods of excess emissions that will be considered violations for the units regulated under 40 CFR 63 Subpart MM.

Conditions 3.4.1 and 3.4.2 have been modified. The conditions had referred to state rule requirements for Lime Kilns 1A, 2A, and 3A. References to Lime Kiln 3A have been deleted because the unit will be decommissioned.

Condition 3.4.4 has been deleted. The condition referred to requirements for Recovery Furnaces 3 and 4, which will be decommissioned.

Condition 3.4.5 has been modified. References to Recovery Furnace 3 and 4 have been deleted because the units will be decommissioned.

Conditions 3.4.6 and 3.4.7 have been deleted. The conditions referred to requirements for Recovery Furnaces 3 and 4 and Smelt Tanks 3 and 4, which will be decommissioned.

Conditions 3.4.8 and 3.4.9 have been modified. Reference to Smelt Tanks 3 and 4 has been removed because the units will be decommissioned.

Condition 3.4.10 has been deleted. The condition referred to requirements for Power Boilers 1, 2, and 3, which will be decommissioned. In addition, the condition referred to Georgia Rule 391-3-1-.02(2)(d) for PM from Power Boiler 4. This PM limit has been subsumed by the PSD BACT limit, so it is no longer necessary to list it in the permit.

Condition 3.4.11 has been modified. Reference to Power Boilers 1, 2, and 3 has been removed because the units will be decommissioned.

Conditions 3.4.12 through 3.4.20 have been deleted. The conditions referred to requirements for the Power Island equipment, which will not be built.

Condition 3.4.21 has been modified. Reference to Power Boilers 1, 2, and 3, Lime Kiln 3A, and Recovery Furnaces 3 and 4 has been removed because the units will be decommissioned. Reference to Waste Fuel Boiler WF has been added.

Conditions 3.4.29 and 3.4.30 have been deleted. The conditions referred to state rules for opacity and PM for Package Boiler 2. The limits in those rules have been subsumed by PSD and 40 CFR 60 Subpart Db requirements.

Condition 3.4.31 has been added to the permit. The condition limits the emission of NO_x from Package Boiler 2 to 30 ppm corrected to 3 percent oxygen from May 1st through September 30th each year and is a requirement of Georgia Rule 391-3-1-.02(2)(III). The rule applies to fuel-burning equipment permitted or brought on site after May 1, 1999. The unit was permitted on October 17, 2002.

Condition 3.4.32 has been added to the permit. The condition limits the emission of SO₂ from the Waste Fuel Boiler to 0.80 pounds per million BTU heat input. This is a requirement of Georgia Rule 391-3-1-.02(2)(g).

Part 4.0 Requirements for Testing

Condition 4.1.3 has been modified. Paragraph (k) has been updated to include SO₂. Paragraph (l) has been deleted because it referred to Combustion Turbines CT1 and CT2, which will not be built. Paragraph (s) has been modified to include the testing requirements for wastewater sludge for the presence of mercury and to delete the requirement for the sampling of used oil. Paragraphs (t) through (v) have been deleted because they referred to the deleted Standards for the Management of Used Oil condition. Paragraphs (w) through (cc) have been added due to the addition of 40 CFR 63 Subpart MM requirements. Reference to the Bark Boiler has been removed because the unit will not be built.

Condition 4.2.1 has been modified. Reference to the decommissioned units and the Power Island units have been removed. Ongoing performance testing requirements have been added for Waste Fuel Boiler WF and Package Boiler 2. Condition 4.2.2 has been updated accordingly.

Conditions 4.2.3 and 4.2.4 have been deleted. The conditions referred to performance testing requirements for Power Island equipment, which will not be built.

Condition 4.2.5 has been deleted. The condition referred to performance testing requirements for Recovery Furnaces 3, 4, and 5. The performance testing has been completed.

Conditions 4.2.6 through 4.2.12 have been deleted. The conditions referred to performance testing requirements for Power Island equipment, which will not be built.

Condition 4.2.15 has been modified. The facility is required to conduct a performance test for NO_x while burning fuel oil in Package Boiler 2. Performance testing has already been completed for natural gas.

Condition 4.2.16 has been modified. The condition has been updated to reflect performance testing requirements for Package Boiler 2. The facility must comply with different testing requirements under 40 CFR 60 Subpart Db with the addition of load bearing oil guns.

Condition 4.2.18 has been added to the permit. The condition requires the facility to conduct the necessary performance testing for SO₂ and TRS for Lime Kilns 1A and 2A at the new lime processing rate.

Condition 4.2.19 has been added to the permit. The condition requires the facility to conduct the necessary performance testing for TRS, SO₂, and opacity for Smelt Tank 5 at the new black liquor solids processing rate.

Conditions 4.2.20 through 4.2.23 have been added to the permit. The conditions require the facility to conduct the necessary initial performance testing for Recovery Furnace 5, Power Boiler 4, Package Boiler 2, and Waste Fuel Boiler WF.

Condition 4.2.24 has been added to the permit. The condition requires the facility to conduct initial performance tests for the presence of mercury from the combustion of wastewater sludge in Waste Fuel Boiler WF. This is a requirement of 40 CFR 61 Subpart E.

Condition 4.2.25 has been added to the permit. The condition requires the facility to conduct a performance test for TRS gases burned in Waste Fuel Boiler WF. The test is needed to demonstrate compliance with the 99.0% destruction efficiency requirement under 40 CFR 52.21.

Conditions 4.2.26 through 4.2.30 have been added to the permit. The conditions detail the performance testing requirements under 40 CFR 63 Subpart MM for the lime kilns, recovery furnace, and smelt tank.

Condition 4.2.31 requires the facility to conduct an initial performance test for the emission of VOC from the linerboard machines. The testing is necessary to demonstrate compliance with the VOC PSD limit.

Part 5.0 Requirements for Monitoring

Condition 5.2.1.a has been modified. The condition described the CEMS requirements for the Lime Kilns. Reference to Lime Kiln 3A has been removed because the unit will be decommissioned.

Condition 5.2.1.b has been deleted. The condition described the CEMS requirements for Recovery Furnaces 3 and 4, which will be decommissioned.

Condition 5.2.1.c has been modified. The condition describes the CEMS requirements for Recovery Furnace 5. Continuous monitoring for furnace oxygen and H₂S has been added and the citation has been updated to include PSD. The language describing the COMS requirements has been added to include the specific COMS requirements under 40 CFR 63 Subpart MM.

Condition 5.2.1.d has been modified. The condition described the CEMS requirements for the Power Boilers. Reference to Power Boilers 1, 2, and 3 has been deleted because they will be decommissioned. NO_x and furnace oxygen CEMS have been added for Power Boiler 4. The citation has been updated to include PSD and PSD Avoidance.

Conditions 5.2.1.e through 5.2.1.g have been deleted. The condition described the CEMS requirements for the proposed Power Island, which will not be built.

Condition 5.2.1.i has been added to the permit. The condition describes the CEMS requirements for Package Boiler 2. Continuous monitoring systems for opacity and furnace oxygen have been required.

Condition 5.2.1.j has been added to the permit. The condition describes the CEMS requirements for the Waste Fuel Boiler. Continuous monitoring systems for opacity, CO, SO₂, and NO_x have been required.

Condition 5.2.2.c has been modified. The condition previously referred to fuel monitoring requirements for the Power Boilers. Reference to Power Boilers 1, 2, and 3 has been removed due to decommissioning and the Waste Fuel Boiler has been added to the requirement.

Conditions 5.2.2.d through 5.2.2.g have been deleted. The conditions described monitoring requirements for the Power Island, which will not be built.

Condition 5.2.2.h has been modified. The condition previously referred to monitoring the amount of natural gas burned by Package Boiler 2. A requirement to monitor the amount of fuel oil burned has been added to the condition as well.

Condition 5.2.2.i has been added to the permit. The condition requires the facility to monitor the lime kiln and smelt tank scrubbers according to the requirements of 40 CFR 63 Subpart MM. These are also requirements under 40 CFR 60 Subpart BB and Georgia Rule (gg).

Condition 5.2.2.j has been added to the permit. The condition requires the facility to monitor the Recovery Furnace ESP for the control of PM and opacity.

Condition 5.2.2.k requires the mill to monitor the amount of fuel fired in Recovery Furnace 5 with and without black liquor solids. This data will be used to ensure SO₂ emissions are below the level set in the permit application.

Condition 5.2.2.l has been added to the permit. The condition requires the facility to monitor the Waste Fuel Boiler ESP for the control of PM and opacity.

Condition 5.2.2.m has been added to the permit. The condition requires monitoring the combustion zone temperature of the Waste Fuel Boiler when burning waste gases from the washer systems.

Condition 5.2.2.n has been added to the permit. The condition requires the facility to monitor the ESP on Power Boiler 4 on a continuous basis.

Condition 5.2.3.a has been modified. The condition specified monitoring requirements for the Recovery Furnaces. Reference to Furnaces 3 and 4 has been removed due to decommissioning.

Condition 5.2.3.b has been deleted. The condition referred to Recovery Furnaces 3 and 4, which will be decommissioned. The requirements for monitoring the Recovery Furnace 5 ESP have been moved to Condition 5.2.2.

Condition 5.2.3.c has been deleted. The condition specified ESP monitoring requirements for the Power Boilers. The monitoring requirement for Power Boiler 4 has been moved to Condition 5.2.2.n.

Condition 5.2.3.d has been deleted. The condition referred to the scrubber monitoring requirements for the Smelt Tank 5 scrubber. An updated 40 CFR 63 Subpart MM condition has been added to Section 5.2.2 for the monitoring of this scrubber.

Condition 5.2.3.e has been modified. The condition described the monitoring requirement for the lime kiln scrubbers. Reference to the scrubbers has been removed. An updated 40 CFR 63 Subpart MM condition has been added to Section 5.2.2 for the monitoring of these scrubbers. A requirement to monitor lime mud solids has been added for the purposes of Subpart MM.

Conditions 5.2.3.f through 5.2.3.i have been deleted. The conditions referred to monitoring requirements for the Power Island, Lime Kiln 3A, and Smelt Tank 3 and 4. These units will not be built or will be decommissioned.

Condition 5.2.3.j has been added to the permit. The condition requires the facility to monitor the number of hours the HVLC gases are fired in Waste Fuel Boiler WF.

Condition 5.2.3.k has been added to the permit. The condition requires the facility to monitor and record the steam production rate for Waste Fuel Boiler WF.

Conditions 5.2.9 through 5.2.14 have been deleted. The conditions referred to monitoring requirements for the Power Island, which will not be built.

Condition 5.2.15 has been deleted. The condition referred to testing requirements for used fuel oil. The condition is no longer necessary because the permit will no longer contain sampling requirements for used fuel oil. Sampling requirements for sulfur content of the oil will remain in Part 6.0 of the permit.

Condition 5.2.18 has been deleted. The condition referred to requirements for the Smelt Tank 3 and 4 Demisters, which will be decommissioned.

Condition 5.2.19 has been added to the permit. The condition requires the facility to comply with all applicable monitoring requirements of CAM (40 CFR 64) for the operation of Recovery Furnace 5 and the Waste Fuel Boiler.

Conditions 5.2.20 and 5.2.21 have been added to the permit. The conditions contain the CAM requirements for the operation of Recovery Furnace 5 and Waste Fuel Boiler WF.

Condition 5.3.1 has been modified. The numerical condition references have been updated for Section 5.2 of the permit.

Condition 5.3.2 has been deleted. The condition referred to requirements for the Power Island, which will not be built.

Condition 5.3.3 has been deleted. The condition referred to testing requirements for used fuel oil. The condition is no longer necessary because the permit will no longer contain sampling requirements for used fuel oil. Sampling requirements for sulfur content of the oil will remain in Part 6.0 of the permit.

Condition 5.3.4 has been modified. The condition has been modified to include the requirement for stream-generating records for Waste Fuel Boiler WF. This is a requirement of 40 CFR 60 Subpart Db.

Part 6.0 Other Recordkeeping and Reporting Requirements

Condition 6.1.7.a(i) has been modified. The condition referred to excess emission criteria for Lime Kilns 1A and 3A. Reference to Lime Kiln 3A has been removed from the condition because it will be decommissioned.

Conditions 6.1.7.a(iv) and (v) have been deleted. The conditions referred to excess emission criteria for Recovery Furnaces 3 and 4, which will be decommissioned.

Condition 6.1.7.a(vi) has been modified. The condition refers to the TRS limit for Recovery Furnace 5. The citation has been updated to include 40 CFR 52.21 due to the BACT analysis.

Condition 6.1.7.a(vii) has been modified. The condition refers to opacity limits for Recovery Furnace 5. The citation for the condition has been updated to include 40 CFR 63 Subpart MM.

Condition 6.1.7.a(ix) has been modified. Reference to Power Boilers 1 through 3 has been removed because the units will be decommissioned.

Condition 6.1.7.a(x) has been modified. The condition referred to the SO₂ PSD limit for the combined power boiler stack. The excess emission statement has been rewritten to indicate the new short term SO₂ limit of 1,130.0 pounds per hour for Power Boiler 4.

Conditions 6.1.7.a(xi) through (xx) have been deleted. The conditions referred to excess emissions criteria for the Power Island, which will not be built.

Condition 6.1.7.a(xxii) has been modified. The condition requires the facility to report when various pieces of equipment associated with Cluster Rule are down. The condition has been modified to remove reference to Lime Kiln 3A, which will be decommissioned.

Condition 6.1.7.a(xxii)(A) has been modified. Reference to Lime Kiln 3A has been removed because it will be decommissioned. The condition details excess emission requirements for the Cluster Rule.

Condition 6.1.7.a(xxiii) has been modified. The numbering of the condition has been corrected from xiii to xxiii.

Condition 6.1.7.a(xxv) has been deleted. The condition allowed the facility to operate Package Boiler 2 only when a Power Boiler or Recovery Furnace is down. The Package Boiler will now be a full time unit; therefore the condition will not be necessary.

Condition 6.1.7.a(xxvi) has been added to the permit. The condition describes as an excess emission any 12-hour period during which the average H₂S concentration from Recovery Furnace 5 is in excess of 4 ppm. This is a PSD limit.

Condition 6.1.7.a(xxvii) has been added to the permit. The condition describes as an excess emission any 12 month period during which the emissions of SO₂ from Power Boiler 4 exceeds 3,837 tons. This is a PSD Avoidance limit.

Condition 6.1.7.a(xxviii) has been added to the permit. The condition describes as an excess emission any 30-day rolling period during which the average NO_x emission rate from Power Boiler 4 is in excess of 0.50 lb/MMBtu. This is a PSD Avoidance limit.

Condition 6.1.7.a(xxix) has been added to the permit. The condition describes as an excess emission any six-minute period during which the opacity from Package Boiler 2 is equal to or in excess of 20%. This is a requirement under 40 CFR 60 Subpart Db.

Condition 6.1.7.a(xxx) has been added to the permit. The condition describes as an excess emission any 3-hour period during which the average NO_x emission rate from Package Boiler 2 is equal to or in excess of 30 ppm during May 1st through September 30th. This is a requirement of Georgia Rule (III).

Condition 6.1.7.a(xxxi) has been added to the permit. The condition describes as an excess emission any six-minute period during which the opacity from Waste Fuel Boiler WF is equal to or in excess of 10%. This is a requirement under 40 CFR 60 Subpart Db and 40 CFR 52.21.

Condition 6.1.7.a(xxxii) has been added to the permit. The condition describes as an excess emission any 3-hour period during which the average CO concentration from Waste Fuel Boiler WF is in excess of 368 ppm. This is a PSD limit.

Condition 6.1.7.a(xxxiii) has been added to the permit. The condition describes as an excess emission any 30-day rolling period during which the average NO_x concentration from Waste Fuel Boiler WF is in excess of 0.20 pounds per million BTU. This is a requirement under 40 CFR 60 Subpart Db.

Condition 6.1.7.a(xxxiv) has been added to the permit. The condition describes as an excess emission any 3-hour period during which the average combustion temperature for the HVLC gases combusted in Waste Fuel Boiler WF is lower than the temperature determined in accordance with Condition 4.2.25.

Condition 6.1.7.a(xxxv) has been added to the permit. The condition describes as an excess emission any 12 month rolling period that SO₂ emissions are in excess of 1,170 tons. This is a PSD Avoidance limit.

Condition 6.1.7.a(xxxvi) has been added to the permit. The condition describes as an excess emission any 3-hour period during which the average SO₂ emissions from Waste Fuel Boiler WF are in excess of 0.80 pounds per million BTU. This is a limit under Georgia Rule (g).

Condition 6.1.7.b(i) has been deleted. The condition referred to exceedance criteria for Power Boilers 1 and 3, which will be decommissioned.

Conditions 6.1.7.b(ii) through (x) have been deleted. The conditions referred to exceedance criteria for the Power Island, which will not be built.

Condition 6.1.7.b(xiii) has been modified. References to deleted conditions have been removed.

Condition 6.1.7.b(xiv) has been deleted. The condition referred to exceedance criteria for the Power Island.

Condition 6.1.7.b(xvi) has been modified. The condition describes the exceedance criteria for the total linerboard production at the mill. The allowable total linerboard limit has been revised to 949,000 scaled tons per 12 months.

Condition 6.1.7.b(xvii) had been modified. The condition referred to exceedance criteria for Package Boiler 2 and the combustion of natural gas. The unit will be permitted to burn very low sulfur fuel oil; therefore the fuel oil has been added to the exceedance condition.

Condition 6.1.7.b(xviii) has been added to the permit. The condition defines as an exceedance any time fuel oil burned in Package Boiler 2 does not meet the definition of "very low sulfur fuel oil" in 40 CFR 60 Subpart Db.

Condition 6.1.7.b(xix) has been added to the permit. The condition defines as an exceedance any 12 month period during which the amount of fuel oil consumed in Package Boiler 2 is in excess of 30 million gallons. This is a PSD Avoidance limit.

Condition 6.1.7.b(xx) has been added to the permit. The condition defines as an exceedance any operating day during which the amount of black liquor solids processed in Recovery Furnace 5 exceeds 5.3 million pounds. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxi) has been added to the permit. The condition defines as an exceedance any 12 month period during which the amount of fuel oil consumed in Recovery Furnace 5, when not co-firing with black liquor solids, is in excess of 1.3 million gallons. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxii) has been added to the permit. The condition defines as an exceedance any period of operation time that the fuel oil combusted in Power Boiler 4 contains more than 0.5 percent sulfur, by weight. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxiii) has been added to the permit. The condition defines as an exceedance any period of operation time that the coal combusted in Power Boiler 4 contains more than 1.29 percent sulfur, by weight. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxiv) has been added to the permit. The condition defines as an exceedance any 12 month period during which the amount of fuel oil consumed in Power Boiler 4 is in excess of 35,352,857 gallons. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxv) has been added to the permit. The condition defines as an exceedance any time fuel oil burned in Waste Fuel Boiler WF does not meet the definition of "very low sulfur fuel oil" in 40 CFR 60 Subpart Db.

Condition 6.1.7.b(xxvi) has been added to the permit. The condition defines as an exceedance any unit-operating day that TDF combustion in Waste Fuel Boiler WF exceeds 80 tons. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxvii) has been added to the permit. The condition defines as an exceedance any unit operating day that wastewater sludge combustion in Waste Fuel Boiler WF exceeds 30 tons. This is a PSD Avoidance limit.

Condition 6.1.7.b(xxviii) has been added to the permit. The condition defines as an exceedance any 24-hour period for which mercury emissions calculated for Waste Fuel Boiler WF are in excess of 7.1 pounds. This limit is a requirement under 40 CFR 61 Subpart E.

Condition 6.1.7.c(i)(A) and (B) have been modified. The conditions have been updated to allow the facility to establish excursion values for the Lime Kiln 1A and 2A scrubber during performance tests required under Part 4.2 of the permit.

Conditions 6.1.7.c(i)(C) through (E) have been deleted. The conditions referred to excursion limits for the scrubber controlling emissions from Lime Kiln 3A. The unit will be decommissioned.

Condition 6.1.7.c(ii) has been modified to update numerical references and specify Recovery Furnace 5 as the only remaining furnace. The averaging time has also been updated to reflect continuous monitoring for the ESP control device.

Condition 6.1.7.c(iii) has been modified. The condition referred to excursion limits for the Recovery Furnace black liquor solids content. Reference to Recovery Furnaces 3 and 4 has been removed because they will be decommissioned.

Condition 6.1.7.c(iv) has been modified. Reference to excursion limits for the Smelt Tank 3 and 4 control devices has been removed because the units will be decommissioned. The condition has been updated to allow the facility to establish excursion values for the Smelt Tank 5 scrubber during performance tests required under Part 4.2 of the permit.

Condition 6.1.7.c(v) has been modified. The condition referred to excursion limits for the Power Boiler ESPs. Reference to Power Boilers 1 through 3 has been removed. The condition has been updated to base the excursion condition on a 3-hour basis rather than a once per shift basis.

Conditions 6.1.7.c(vi through xii) have been deleted. The conditions referred to excursion limits for Power Island Equipment, which will not be built.

Condition 6.1.7.c(xv)(B) has been modified. The process wastewater column feed temperature excursion value has been reduced from 185 degrees to 167 degrees Fahrenheit. The change is based on Cluster Rule performance test data.

Condition 6.1.7.c(xvi) has been added to the permit. The condition defines as an excursion any 3 hour period during which the furnace oxygen level for Recovery Furnace 5 is below the value that provides a reasonable assurance of compliance with the CO and VOC PSD limits.

Condition 6.1.7.c(xvii) has been added to the permit. The condition defines as an excursion any 3 hour period during which the furnace oxygen level for Power Boiler 4 is below the value that provides a reasonable assurance of compliance with the CO and VOC PSD limits.

Condition 6.1.7.c(xviii) has been added to the permit. The condition defines as an excursion any 3 hour period during which the furnace oxygen level for Package Boiler 2 is below the value that provides a reasonable assurance of compliance with the CO and VOC PSD limits.

Condition 6.1.7.c(xix) has been added to the permit. The condition sets an excursion for the Waste Fuel Boiler ESP total power based on the performance tests conducted in accordance with Part 4.2 of the permit. ESP monitoring is related to the control of PM and opacity.

Condition 6.1.7.c(xx) has been added to the permit. The condition defines as an excursion any 3-hour period during which the average combustion temperature and average carbon monoxide concentration are not within the ranges that provide a reasonable assurance of compliance with the VOC PSD limit.

Condition 6.1.7.d(i) has been modified. The numerical references in the condition have been updated as necessary.

Condition 6.1.7.d(iii) has been modified. The condition requires the facility to provide a signed statement about the "very low sulfur oil" burned at the facility. Reference to Waste Fuel Boiler WF and Package Boiler 2 has been added to the condition.

Condition 6.1.7.d(iv through vi) have been deleted. The conditions referred to excursion limits for Power Island equipment and used fuel oil analysis requirements.

Condition 6.1.7.d(viii) has been modified to remove reference to deleted Condition 4.2.4.

Condition 6.1.7.d(ix) has been added to the permit. The condition requires the Permittee to include violations under 40 CFR 63 Subpart MM as described in Condition 3.3.80 with the periodic report required by Condition 6.1.4.

Condition 6.1.8 has been deleted. The condition referred to Power Island equipment.

Condition 6.2.1 has been modified. The condition specifies record keeping and reporting requirements associated with the linerboard limit in Condition 3.2.1. The condition has been modified to update the linerboard production limit. The record keeping is necessary to determine compliance with the PSD limit. As requested by the Stationary Source Compliance Program, a requirement has been added so that records of linerboard produced from recycle pulp will be available.

Condition 6.2.2 through 6.2.18 have been deleted. The condition referred to record keeping requirements for the Power Island, which will not be built.

Condition 6.2.19 has been modified. Reference to Lime Kiln 3A has been removed because the unit will be decommissioned.

Condition 6.2.21 has been modified. Reference to Recovery Furnaces 3 and 4 has been removed because the units will be decommissioned. The condition has also been modified to require that the facility maintain a daily record of the total amount of black liquor solids fired in Recovery Furnace 5. These records are necessary to determine compliance with the PSD Avoidance limit in Condition 3.3.62.

Condition 6.2.23 has been modified. The citation has been updated to include PSD Avoidance.

Condition 6.2.24 has been deleted. The condition referred to record keeping requirements for Power Boilers 1 and 3; the units will be decommissioned.

Condition 6.2.25 has been modified. Reference to Power Boilers 1, 2, and 3 have been removed because the units will be decommissioned. Reference to woodwaste has been removed. The condition requires the facility to keep records of quantities and types of fuels burned in Power Boiler 4. The records are necessary to calculate air emissions.

Condition 6.2.26 has been modified. The condition requires the facility to calculate SO₂ emissions from Power Boiler 4 (reference to Power Boilers 1 through 3 has been removed). The calculations are necessary to determine compliance with the SO₂ PSD Avoidance limit in condition 3.3.13.

Condition 6.2.28 has been modified. The condition has been changed to include heat content and sulfur content analysis for used oil. The condition is necessary to determine compliance with the sulfur content limits for fuel found throughout the permit.

Condition 6.2.29 has been modified. A typographical error in paragraph (b) of the condition has been corrected from "6.2.9.a" to 6.2.29.a."

Condition 6.2.31 has been modified. Reference to Power Boilers 1 through 3 and Recovery Furnaces 3 and 4 have been removed because the units will be decommissioned.

Condition 6.2.32 has been deleted. The condition referred to record keeping requirements which have been removed from the permit.

Condition 6.2.40 has been deleted. The condition referred to submission requirements for the Power Island, which will not be built.

Condition 6.2.41 has been deleted. The condition referred to the back-up status of Package Boiler 2. The unit is no longer a backup boiler.

Condition 6.2.44 has been added to the permit. The condition requires the facility to commence construction of the requested modifications within 18 months of the date of issuance of the permit. This is a requirement of 40 CFR 52.21 and provides a reasonable assurance that all BACT analyses and modeling results are up to date at the time of start up.

Condition 6.2.45 has been added to the permit. The condition requires the complete privatization of Mays Bridge Road between State Route 20 and Turner Bend Road prior to the start up of the modified and new equipment. This condition is necessary to ensure compliance with air quality requirements.

Condition 6.2.46 has been added to the permit. The condition specifies the conditions under which the facility must implement corrective action for the operation of the lime kilns, smelt tank, and recovery furnace for 40 CFR 63 Subpart MM. Corrective action is necessary to insure on-going compliance with the limits of Subpart MM.

Condition 6.2.47 has been added to the permit. The condition specifies that the facility develop and implement an SSM Plan for the lime kiln, smelt tanks, and recovery furnace under the requirements of 40 CFR 63 Subpart MM.

Condition 6.2.48 has been added to the permit. The condition specifies the general records the facility must maintain in accordance with 40 CFR 63 Subpart MM. The records are necessary to demonstrate on-going compliance with the Subpart MM emission limits.

Condition 6.2.49 has been added to the permit. The condition requires the facility to submit notifications as required by 40 CFR 63 Subpart MM. These records are necessary to demonstrate initial and on-going compliance with the requirements of Subpart MM.

Condition 6.2.50 has been added to the permit. The condition requires the facility to submit 40 CFR 63 Subpart MM bubble limit calculations and supporting data as part of the notification of compliance status required by 40 CFR 63 Subpart A. These records are necessary to demonstrate initial and on-going compliance with the requirements of Subpart MM.

Condition 6.2.51 has been added to the permit. The condition requires the facility to provide notification to the Division prior to actions that may affect on-going compliance with the site-specific 40 CFR 63 Subpart MM bubble limits.

Condition 6.2.52 has been added to the permit. The condition requires the facility to recalculate and submit the site-specific 40 CFR 63 Subpart MM bubble limit if actions are taken that may affect compliance. The submissions are necessary to ensure that proper emission limits are in place at all times.

Condition 6.2.53 has been added to the permit. The condition requires the facility to keep daily and 12-month rolling totals for the amount of fuel oil burned in Recovery Furnace 5. The records are necessary to determine compliance with the PSD limit for fuel oil.

Condition 6.2.54 has been added to the permit. The condition requires the facility to keep daily and 12-month rolling totals for the amount of fuel oil burned in Power Boiler 4. The records are necessary to determine compliance with the PSD limit for fuel oil.

Condition 6.2.55 has been added to the permit. The condition requires the facility to obtain and maintain fuel oil receipts for Package Boiler 2 that show the fuel complies with the definition of "very low sulfur oil." The records are a requirement of 40 CFR 60 Subpart Db.

Condition 6.2.56 has been added to the permit. The condition requires the facility to record and maintain fuel burning records for Package Boiler 2 and calculate the corresponding annual capacity factor for each fuel. The records and calculations are a requirement of 40 CFR 60 Subpart Db.

Condition 6.2.57 has been added to the permit. The condition requires the facility to keep daily and 12-month rolling totals for the amount of fuel oil burned in Package Boiler 2. The records are necessary to determine compliance with the PSD limit for fuel oil.

Condition 6.2.58 has been added to the permit. The condition requires the facility to submit notifications for the start up of Waste Fuel Boiler WF as required by 40 CFR 60 Subpart A and 60.49b(a).

Condition 6.2.59 has been added to the permit. The condition requires the facility to obtain and maintain fuel oil receipts for Waste Fuel Boiler WF that show the fuel complies with the definition of “very low sulfur oil.” The records are a requirement of 40 CFR 60 Subpart Db.

Condition 6.2.60 has been added to the permit. The condition requires the facility to record and maintain fuel burning records for Waste Fuel Boiler WF and calculate the corresponding annual capacity factor for each fuel. The records and calculations are a requirement of 40 CFR 60 Subpart Db.

Condition 6.2.61 has been added to the permit. The condition requires the facility to sample wastewater sludge burned in Waste Fuel Boiler WF for mercury analysis. The results are required to be submitted with the reports required by Condition 6.1.4. The analyses and records are necessary to determine compliance with the mercury emission limit under 40 CFR 61 Subpart E.

Condition 6.2.62 has been added to the permit. The condition requires the facility to maintain records of the 24-hour mercury emission calculation required to be performed to determine compliance with Condition 3.3.76. The records are necessary to demonstrate ongoing compliance with 40 CFR 61 Subpart E.

Condition 6.2.63 has been added to the permit. The condition requires the facility to maintain daily records that indicate which incineration device is burning HVLC TRS gas streams. This condition is necessary because Waste Fuel Boiler WF may combust Cluster Rule Phase II gases.

Condition 6.2.64 has been added to the permit. The condition requires the facility to use various monitored data in addition to the SO₂ CEMS to calculate the SO₂ emission rate in pounds per hour from Waste Fuel Boiler WF. The calculations are necessary to demonstrate compliance with the sulfur dioxide PSD Avoidance limit in Condition 3.3.73.

Condition 6.2.65 has been added to the permit. The condition requires the facility to submit to the Division a protocol for determining ongoing compliance with the PSD VOC limit for the linerboard machines.

Condition 6.2.66 has been added to the permit. The condition requires the facility to submit information as required by 40 CFR 63.50 through 63.56 for Power Boiler 4 and Waste Fuel Boiler WF. The boilers will be subject to 40 CFR 63 Subpart DDDDD – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters. The rule has not yet been promulgated.

Part 7.0 – Other Specific Requirements

Condition 7.14.1 through 7.14.4 have been added to the permit. The conditions require the facility to shut down the equipment to be decommissioned upon startup of the new and modified equipment. The conditions also clarify which conditions become effective upon startup of the new and modified equipment and directs the facility to comply with all applicable rules and regulations until units to be decommissioned are permanently shutdown.

Condition 7.3.1 has been deleted. The condition previously referred to the Power Island units, which will not be built.

Part 8.0 – General Provisions

Condition 8.14.1 has been updated due to a recent Title V template change.

Attachment B

The Insignificant Activities Checklist has been updated for the addition of Diesel Tank FT1. The total under “Storage Tanks and Equipment – All petroleum liquid storage tanks storing a liquid with a true vapor pressure of equal to or less than 0.50 psia as stored” has been increased from 20 to 21.

APPENDIX A

Draft Revised Title V Operating Permit Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill
Rome (Floyd County), Georgia

APPENDIX B

Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill
PSD Permit Application and Supporting Data

Contents Include:

1. PSD Permit Application No. 14756, dated October 3, 2003; Fully updated April 2004.

APPENDIX C

EPD'S PSD Dispersion Modeling and Air Toxics Assessment Review