

Prevention of Significant Air Quality Deterioration Review
Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill,
located in Rome, Georgia (Floyd County)

FINAL DETERMINATION

Application No. 14756

October 2004



State of Georgia
Department of Natural Resources
Environmental Protection Division

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BACKGROUND

On October 6, 2003, Inland Paperboard and Packaging, Inc. – Rome Linerboard Mill (Inland) submitted an application for an air quality permit to modify, construct, and operate equipment at their Rome, Georgia linerboard mill. 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.

On July 26, 2004, the Division issued a Preliminary Determination stating that the proposed projects should be approved. The Preliminary Determination contained a draft Air Quality Permit for the construction and operation of the projects.

The Division requested that Inland place a public notice in a newspaper of general circulation in the area of the existing facility notifying the public of the proposed construction and providing the opportunity for written public comment. Such public notice was placed in *The Rome News Tribune* (legal organ for Floyd County) on July 27, 2004 and August 1, 2004. The notice for August 1, 2004 contained a correction of the date of a public information meeting and public hearing for the application. The public meeting took place on August 17, 2004 at the Rome Civic Center, Floyd County, Georgia. The public hearing took place on September 2, 2004. The public comment period also ended on September 2, 2004 at the same location.

During the comment period, comments were received from U.S. EPA Region 4 and the facility. There were no written comments received from the general public. During the public hearing, three individuals offered oral comments, all of which were supportive of the modifications proposed by Inland and the issuance of the permit amendment.

A copy of the final permit is included in Appendix A. A copy of written comments received during the public comment period is provided in Appendix B.

U.S. EPA REGION 4 COMMENTS

Comments were received from Jim Little, U.S. EPA Region 4, by email on August 27, 2004. Jim Little discussed these comments in phone conversations with Heather Cottrell, GA EPD, prior to emailing them in written form. Mr. Little reviews PSD permits for completeness and enforceability. No comments were received from the U.S. EPA Region 4 Title V review program.

Comment 1

If an existing emissions unit is subject to a best available control technology (BACT) determination but is not undergoing a substantial physical change or change in the method of operation, previous actual emissions from such a unit should be taken into account in the BACT determination. In other words, the unit should be able to achieve at least as low an emission rate in the future as it did in the past unless the change triggering a BACT determination alters the factors that affect emissions. If the proposed BACT allowable emission rates for any existing units exceed past actual emission rates for these units, please check to make sure that the higher allowable emission rates are justifiable.

EPD Response: The units for which past stack test data exists is Recovery Furnace 5 (for PM and TRS) and Power Boiler 4 (for PM and CO). No testing has been conducted for Package Boiler 2 for any of the PSD significant pollutants and the Waste Fuel Boiler is a new emissions unit. The facility has performed several statistical analyses in response to this comment.

The PM BACT limit for Recovery Furnace 5 has been determined to be 0.021 gr/dscf. Tested PM emissions from this unit in 2003 were 0.01 gr/dscf as an average of 3 runs. The facility determined the standard deviation of the three runs to be 0.0022. Therefore at a confidence level of 99% (which equates to a "t" value of 9.925), this tested number is equivalent to 0.022 gr/dscf ($X \pm ts/vn$). The facility also performed the same analysis for the 2001 Recovery Furnace data and found that tested emissions were 0.00702 gr/dscf as an average of 3 runs and the standard deviation of the three runs was 0.0017. At an approximate confidence level of 99%, this 2001 average is equivalent to 0.021 gr/dscf. The EPD conducted the same statistical analyses and obtained the same results.

TRS emissions from Recovery Furnace 5 have a proposed future BACT limit of 5 ppm. Tested emissions from this unit in 2001/2002 averaged 2.81 ppm, as an average of 6 total runs. The standard deviation for this testing was 3.26. The facility determined that this resulted in an upper bound of 5.32 ppm at an 80% confidence level; however, the facility did not use the correct t value. The EPD has calculated the upper bound to be 4.96 ppm at an 80% confidence level.

Power Boiler 4 is being modified as part of this project by the addition of new low NO_x burners. It is understood that these modifications could potentially increase CO emissions, so an analysis of that previous testing data is not necessary.

See the response to Comment 3 for PM emissions from Power Boiler 4.

Based on the statistical analyses using a confidence level in which Inland must operate by to demonstrate compliance, the facility believes that there is no statistical difference between the tested values and the proposed BACT levels.

The EPD must consider the ability of a source, when equipped with BACT, to demonstrate compliance with an emissions limit on an ongoing basis. In addition to the analyses above, actual test data does not show emissions that are extremely low compared to the proposed BACT limits. The test data for PM and TRS from Recovery Furnace 5 is approximately 48% and 56% of the proposed BACT limits, respectively. The EPD believes that the BACT limits are reasonable compared to the stack test data.

Comment 2

In the BACT evaluations for the No. 4 Power Boiler (particulate matter), the new waste fuel boiler (particulate matter and volatile organic compounds), the No. 2 Package Boiler (particulate matter, carbon monoxide, volatile organic compounds), and the No. 1 and No. 2 Linerboard Machines (volatile organic compounds), the applicant refers to the results of BACT cost calculations. I did not find these calculations in the permit application and therefore could not check to see if they were appropriate. Please ask the applicant to provide the calculations used to generate the BACT cost results stated in the application.

EPD Response: The facility has submitted the cost estimating spreadsheets for the Waste Fuel Boiler (VOC), Package Boiler 2, and the Linerboard Machines and they have been reviewed by the EPD. The facility used the standard EPA cost estimating worksheets. No changes need to be made to the BACT analysis. See Comment 3 for the response for Power Boiler 4 and the Waste Fuel Boiler (PM).

Comment 3

In the BACT evaluation for the No. 4 Power Boiler (particulate matter) and the new waste fuel boiler (particulate matter), the applicant appears to use incremental cost efficiency values to justify its BACT conclusions. EPA's position is that reliance on total cost efficiency values is much preferred to reliance on incremental cost efficiency values. Wherever the applicant has cited incremental cost efficiency values without total cost efficiency values, please obtain total cost efficiency values and verify that these values would lead to the same BACT conclusion. Please note that the cost efficiency value for the No. 4 Power Boiler may in fact be a total cost efficiency value if the "baseline" emission rate for this calculation is a current enforceable emission rate (that would have to be met if the boiler were not modified) rather than an uncontrolled emission rate.

EPD Response: The new Waste Fuel Boiler will be a rebuild of Recovery Furnace 3, which currently operates an electrostatic precipitator for the control of particulate matter. The rebuilt unit will utilize the existing ESP for the control of PM emissions. In the BACT discussion, baghouses were incorrectly identified as the control devices with the lowest emission limits in the RBLC database. Table 4-9 of the application shows that ESP are the control devices associated with the lowest BACT limits for units that burn the same fuel types that the Inland boiler will burn.

Table 4-9 also shows that boilers with ESP's are currently permitted with the lowest emission rate of 0.02 lb/MMBtu. The discussion in the application references boilers at two facilities: Beaver-Livermore Falls in Maine and Interstate Paper in Riceboro, Georgia. As shown in Table 4-9, the Beaver facility is permitted at 0.02 lb/MMBtu (and not 0.03 as specified in Section 4). The Interstate Paper facility, which was not subject to PSD review for PM, but did complete a BACT analysis for the pollutant, is not shown in Table 4-9. These two boilers are the most similar with regard to control (multiclone and ESP) and fuel mix, and therefore the BACT limit of 0.025 lb/MMBtu adopted is the average of these two values, and is considered BACT. In addition, in this case, a multiclone and ESP is considered the technology to meet the proposed BACT limit, and not a baghouse, which does not appear on Table 4-9 until a PM emission limit of 0.03 lb/MMBtu. Based on this information, it is not necessary to conduct a cost analysis for a baghouse system because Inland is installing the control system with the lowest limits for a similar boiler.

Inland reassessed the BACT determination for PM from Power Boiler 4 based on EPA's comment that total cost should be used to evaluate the use of a baghouse. The facility has stated that Power Boiler 4 is an existing boiler that was installed in 1962 and requires replacement of several old steam tubes that are in disrepair. This replacement is needed for continued operation of the unit and is not intended to increase its capability. In addition, in anticipation of the pending NO_x SIP Call regulatory requirements, Inland will be replacing the burners with upgraded low NO_x burners, which will reduce NO_x from the unit from 1721 TPY to 1237 TPY. These new burners will incidentally also provide a slight increase in firing rate (560 MMBtu/hr to 565 MMBtu/hr).

The facility further evaluated the RBLC Clearinghouse for PM from pulverized coal boilers to ascertain which emission rates are actually being demonstrated in industry. Table 1 of the letter dated October 1, 2004 provides a subset of better performing units from this original list. Both ESP's and baghouses are utilized for PM control technology on pulverized coal fired boilers. Calls by Inland to the state environmental agencies indicated that several facilities that listed baghouses were never constructed, but others were indeed meeting their emission limit.

Inland found that of the facilities contacted, York County Energy Partners, Wygen 2, Archer Daniels Midland Company, Two Elk Generation Partners, AES Beaver Valley and Iowa Electric Light & Power Co. have not been constructed. Facilities meeting their emission limits are JEA Northside Generating Station, Central Power & Lime, Archer Daniels Midland Company, and Kansas City Power & Light Co. JEA Northside Generating Station in Jacksonville, Florida installed a coal boiler in 2002. This boiler is permitted at a PM emission limit of 0.011 lb/MMBtu, and is controlled by an ESP. Recent stack testing verifies compliance with this limit. Central Power and Lime in Hernando County, Florida is permitted at 0.0135 lb/MMBtu and is controlled using a fabric filter. Recent stack testing for this unit indicates they are meeting their permitted limit. Archer Daniels Midland Company had several listings in the Clearinghouse for several different facilities in Iowa. The facility in Cedar Rapids, Iowa permitted two circulating fluidized bed boilers in 1998 (Units 5 and 6), however only built Unit 5. Unit 5 is permitted at 0.015 lb/MMBtu on a 3-hr basis. Particulate emissions are controlled with a fabric filter and recent stack testing indicates that Unit 5 is in compliance. Kansas City Power & Light Co., Hawthorne Station's coal boiler is controlled by a fabric filter system meeting their PM emission limit of 0.018 lb/MMBtu. The facility noted that all of these listings were for large utility boilers or are new units and not minor modifications to older boilers such as Power Boiler 4.

In order to compare demonstrated levels of 0.011 lb/MMBtu to our proposed level of 0.07 lb/MMBtu in the PSD application, the facility developed cost data and made comparisons on that basis. In order to determine appropriate costs to evaluate BACT controls for Power Boiler 4, Inland contacted several vendors regarding fabric filters. The facility believes that this is a more accurate approach than what was provided in the application, which relied on EPA cost spreadsheets to determine equipment costs and cost effectiveness.

In order to provide the vendors with the proper process information, the facility utilized existing stack test data plus the new firing rate of Power Boiler 4 (565 MMBtu/hr) to project future exhaust temperature, flowrates, percent moisture and oxygen. The facility also determined the future dry standard cubic feet of flow from the modified boiler by multiplying the boiler rating by the appropriate F-factor for coal (9,780 dscf/MMBtu). Inland then determined the actual flowrate by converting this dry value with real numbers from stack tests. The future flowrate was calculated to be 330,082 acfm @ 362 F, which was given to the vendors for determining a budget estimate for a fabric filter. The facility also made calculations based on the future conditions to determine what the uncontrolled emission levels would be. To do this, AP-42 emission factors were used for a wet bottom bituminous pulverized coal fired boiler with a multiclone using an ash content for coal of 7% (the average ash content of coal received by Inland for the two previous years). This resulted in an uncontrolled emissions level of 214.6 lb/hr at the new firing rate of 565 MMBtu/hr. Assuming operations at 8,760 hours per year, the result is 940 tpy of uncontrolled emissions.

Several vendors were contacted to provide fabric filter cost quotes, and two vendors also provided a cost for installing a new stack for the baghouse. A new stack would be required since the existing stub stacks on the ESP would have to be demolished along with the ESP. Total installed capital costs for the baghouse were estimated to be approximately \$11.3 million. This cost includes installation of the new baghouse, demolition of the existing ESP, construction of a new stack, a new fan for the baghouse, and an initial set of bags.

Operating costs were also developed for the existing ESP for comparison to installation of a new fabric filter. These operating costs were developed based on power consumption of the fans and required electricity needed for the ESP plates. Two cases were evaluated: 1) ESP as is with no modifications or upgrades, and 2) ESP upgraded for increased performance (better controls and new plates). The first case consists of the ESP remaining in operation on Power Boiler 4, and therefore the only future costs will be for operation. The second case assumes replacement of the plates on the first field of the ESP and upgrades to the controls.

The table below compares the three separate alternatives. The facility believes that the table shows a clear cost break in going from 0.05 lb/MMBtu to the 0.011 lb/MMBtu level, from both a total and incremental cost effectiveness standpoint.

Table 2 Summary of BACT Economic Analysis for PM Control on Power Boiler 4

Control Alternative	Emissions		Emissions Reduction	Installed Capital Cost	Operating Cost	Total Annualized Cost	Total Cost Effectiveness	Incremental Cost Effectiveness	Toxics Impact	Adverse Environmental Impact
(lb/MMBtu)	(lb/hr)	(tpy)	(tpy)	(\$)	(\$/yr)	(\$/yr)	(\$/ton)	(\$/ton)	(Y/N)	(Y/N)
0.07	39.6	173.2	766.8	\$0	\$264,749	\$264,749.26	\$345.28	\$0.00	N	N
0.05	28.3	123.7	816.3	\$500,000	\$264,749	\$324,749.26	\$397.85	\$1,212.27	N	N
0.011	6.2	27.2	912.8	\$11,281,439	\$1,814,534	\$2,148,409.59	\$2,353.70	\$18,895.43	N	N

In addition to the emission rates calculated above, the EPA has stated that a total cost analysis may be based on a current enforceable emission rate that would have to be met if the boiler were not modified. The boiler is subject to Georgia Rule (d), which limits the emissions of particulate matter to 0.310 lb/MMBtu. Based on this limit, going from the baseline emissions to 0.011 lb/MMBtu results in an emissions change of 733.4 tpy. This then results in a total cost of \$2,903 per ton.

The EPD believes that this site-specific cost analysis shows that a baghouse should not be considered BACT for this particular boiler. The EPD will impose the 0.05 lb/MMBtu limit for the boiler based on the facility’s analysis. It should be noted that this reduction in potential emissions (49.5 tpy) does not affect the requirement that the facility cannot operate the modified/new units while Mays Bridge Road remains open. The PM ambient modeling has been run with the new Power Boiler 4 emission rate and it has been determined that the new concentration on the road is 170 ug/m³. With respect to EPA Comment 1, the proposed emission rate is nearly identical to past actual Power Boiler 4 emission rates of 0.0491 and 0.0460 lb/MMBtu. Because the past actual has been as much as 98.2% and 92% of the proposed, limit the facility will have to make the proposed ESP upgrades such that compliance with the limit is achieved on an on-going basis.

Comment 4

On page 22 of the preliminary determination, the Georgia Environmental Protection Division (GEPD) states that use of low sulfur (<0.5% S) fuel oil will help minimize particulate matter emissions from the No. 2 Package Boiler. If this emissions unit were subject to BACT for sulfur dioxide, GEPD would probably specify use of ultra low sulfur fuel oil as of year 2007 when such fuel should be widely available. Even though the unit is not subject to BACT for sulfur dioxide, you might consider requiring use of ultra low sulfur fuel oil for consistency with other recent Georgia permitting actions and as a possible means of even further reducing particulate matter emissions.

EPD Response: The EPD conducted a search for permits requiring the use of ultra low sulfur fuel oil. The only permit located is for the McIntosh Combined-Cycle Facility owned by Savannah Electric and Power Company located in Rincon, Effingham County. The facility underwent PSD review for sulfur dioxide emissions from a plant expansion that included two combined-cycle power blocks (combustion turbines/heat recovery steam generators and steam turbine generator).

The McIntosh facility is located near three Class I Areas. The ambient air analysis showed problems with the Class I Area sulfur dioxide increments and visibility impacts at Cape Romain and Wolf Island. In order to resolve the issue, the applicant committed to utilizing a fuel oil with a maximum sulfur content of 0.05 weight percent in the existing eight simple cycle combustion turbines at or before startup of the four combined-cycle systems. The Federal Land Manager also requested that an even lower sulfur fuel should be used when it became available (0.01 weight percent). This led to the requirement that the facility use ultra low sulfur fuel oil (0.0015 weight percent) starting June 1, 2007.

The EPD believes that the case of the McIntosh facility was unique. The facility was required to undergo BACT review for sulfur dioxide, was required to use low sulfur fuel oil in order to comply with the Class I Area analysis, and was subject to a specific request from the U.S. Fish and Wildlife Service Federal Land Manager. The Inland modification is not subject to review under PSD for sulfur dioxide. In addition, the EPD revisited the RBLC database for boilers subject to PSD review for sulfur dioxide and burning distillate fuel oil. The fuel oil sulfur limits ranged from 0.04 to 0.70 weight percent for those entries that included a fuel oil sulfur limit. This indicates that, even for those sources undergoing a sulfur dioxide BACT analysis, ultra low sulfur fuel oil assumed to be available in the next few years was not prescribed.

In addition, Inland states that it has reviewed the available data on the ash content of diesel fuels in determining the particulate matter BACT limit. Inland found that the typical ash content of low sulfur diesel fuel is 0.01% to 0.1%, with variations due to different vendors and sources. Further, the ash content for ultra-low sulfur diesel fuel is not known since this fuel is not in common use within industry yet. However, ultra-low diesel is developed by removing sulfur through the process of extraction, which Inland believes would not likely have a significant effect on lowering the ash content. The proposed BACT level of 0.05 lb/MMBtu for particulate matter emissions from low sulfur diesel is based on the expected weight percentages of ash listed above. Therefore, any possible reduction of particulate matter emissions from use of ultra low sulfur diesel fuel would be minimal. Inland's argument concerning the ash content of fuel is supported by data in the RBLC clearing house – the sources with the lower limit for oil sulfur content does not always have the lower particulate matter limit.

Finally, Inland is currently reducing allowable sulfur dioxide emissions as part of this project, and believes that an unnecessary requirement to use ultra-low sulfur diesel would provide additional burdens for the mill. The required use of ultra-low sulfur diesel could also present potentially serious financial and operational problems for the mill since cost and future availability of this fuel are unknown at this point. Based on the above information, the EPD does not believe that the use of ultra low sulfur fuel oil is warranted in this case for particulate matter emissions.

Comment 5

During one of our conversations you indicated that you would check to make sure that condensable particulate matter was taken into account in the estimation of PM₁₀ emissions and in the modeling of PM₁₀ emissions.

EPD Response: The PSD analysis includes condensable particulate matter.

INLAND – ROME LINERBOARD MILL COMMENTS

Comments were received from Annette White, Inland Assistant Technical Manager / Environmental on August 27, 2004.

Comment 1 – Administrative

On the first page of the amendment please add a comma between *larger* and *low* NOx burners when describing the modifications to the No. 4 Power Boiler. The intent with this change is to clarify that the No. 4 Power Boiler does not currently have low NOx burners.

EPD Response: The EPD agrees with the comment. The comma has been added to the permit cover page as requested.

Comment 2 – Administrative

In the second to last paragraph on the cover page of the amendment, EPD lists the permit application submittals as being submitted on October 3rd and 28th 2003. Though inconsequential, our records show a hand-delivery date of October 6, 2003 for the original PSD Permit Application (No.14756 and a submittal date of October 27, 2003 for Application 14801 (Stripper Condensate Temperature Change). EPD is most likely using their receipt date of the request letter rather than the letter date. Since there are only two Application Numbers addressed, we are assuming that all correction sheets and additional application amendments were treated as part of the original PDS Permit Application No. 14756 and require no further reference.

EPD Response: The EPD will not make any changes as a result of this comment. The application dates on the permit amendment cover page refer to the date the application pages were signed by the facility's responsible official, not the date on any cover letter accompanying the application. Also, the signature date is used to eliminate confusion because a facility is not always aware of the exact date of receipt by the EPD of a permit application.

The application pages have been re-examined and the dates on the cover page have been verified. The facility is correct that correction sheets and additional information do not require reference as they are covered under "supporting data" and "subsequent submittal."

Comment 3 – H-Washer System

In the fourth to last paragraph on page 1 please add the following sentence. "The H-washer will be decommissioned." In addition, the reference to the H-washer (WH) should be removed from the 3.1.4 Emission Units table on page 4.

EPD Response: The EPD agrees with the comment. Although the H-Washer is listed to be decommissioned on the permit cover page it should also be removed from the permit. The changes have been made as requested. Reference to the H-Washer has been removed from the Emission Units table. Conditions 3.3.38, 5.2.2.a, and 6.1.7.a(iii) have also been deleted.

Comment 4 – Administrative

Change the last sentence on Page 1 to read as follows: The plant will also re-pipe ~~so the steam stripper evaporator set so it~~ can receive steam directly from the mill steam header rather than from the concentrator.

The project calls for the change to be made to the stripper steam feeding system, not to the evaporator.

EPD Response: The change has been made as requested. The reference to the evaporator set was a typographical error.

Comment 5 – Recovery Furnace 5

State rule 391-3-1-.02(2)(g) excludes recovery furnaces and therefore should not be listed as an applicable requirement on page 2 of the Emissions Units for Recovery Furnace 5.

EPD Response: The EPD disagrees with the comment. Georgia Rule (g) consists of several subparts. Subpart 1, which limits the emission rate of sulfur dioxide from fossil fuel firing sources with a capacity exceeding 250 MMBtu/hr, expressly excludes recovery furnaces from applicability. Subpart 2 limits the sulfur content of fuel burned in fuel burning sources based on the firing capacity of the unit. This subpart of the rule does not exclude recovery furnaces. Subpart 2 of the rule has been applied consistently to all recovery furnaces in the state of Georgia. No changes will be made as a result of this comment.

Comment 6 – Administrative

Permit condition No. 3.3.6 h. should be corrected to replace “hydrogen disulfide” with “hydrogen sulfide” (H₂S). Hydrogen sulfide is the regulated pollutant that underwent a BACT analysis.

EPD Response: The EPD agrees with the comment. The typographical error has been corrected in Conditions 3.3.6.h, 4.2.20.b, and 6.1.7.a(xxvi).

Comment 7 – Administrative

Permit condition 3.3.69 should read 3 million instead of 30 million. This appears to be a typographic error. The emission calculations were based on 3 million gallons of fuel oil being fired in the package boiler per year.

EPD Response: The EPD agrees with the comment. The typographical error has been corrected in Condition 3.3.69 and 6.1.7.b(xix).

Comment 8 – Waste Fuel Boiler WF

The Mill requests that the fuels listed to be fired in the waste fuel boiler in permit condition 3.3.72 specifically include bark and No. 5 fuel oil.

EPD Response: The EPD finds the specific reference to these fuels to be acceptable. The changes have been made as requested. The facility has properly calculated potential emissions from the boiler for these two fuels.

Comment 9 – Waste Fuel Boiler WF

The amount of fuel oil being fired in the waste fuel boiler will be limited to 1.1 million gallons per year as indicated in the permit application. This represents 2.1% of the annual capacity of the boiler on fuel oil. Per NSPS Subpart Db, if the Mill limits fuel oil firing to 10% of the annual capacity factor for the boiler, the 0.2 lb/MMBtu nitrogen oxides limit does not apply. Inland would request that Permit condition 3.3.73 b. be revised to read as follows:

- b. Contain nitrogen oxides in excess of 0.3 pounds per million BTU heat input.

The Subpart Db reference should be deleted. This agrees with the NO_x emission rate used in the permit application. A new permit condition that will limit the fuel oil firing in the wood waste boiler to 1.1 million gallons/year should be added to the permit.

EPD Response: The EPD agrees with the comment. The fuel oil limit was inadvertently omitted from the final draft amendment. The limit has been added to Part 3.0 and Condition 6.1.7.b of the permit. The Division has also verified that the fuel oil limit represents about 2.1% of the annual capacity for the boiler.

Based on the fuel oil limit, the facility is not subject to NO_x limits under 40 CFR 60 Subpart Db. Therefore, Condition 3.3.73.b has been deleted. The facility is subject to a NO_x limit of 0.30 lb/MMBtu under Georgia Rule (d). A condition for the Georgia Rule (d) limit has been added to Part 3.4 of the permit. This is a same value used to calculate the net change in NO_x emissions for the PSD application. Reference to Waste Fuel Boiler WF has been removed from Condition 5.3.4. Also, Condition 6.1.7.a(xxxiii) has been changed from 0.20 lb NO_x / MMBtu to 0.30 lb NO_x / MMBtu and the citation for the condition has been changed from 40 CFR 60 Subpart Db to Georgia Rule (d).

Conditions 3.3.72, 6.1.7.b(xxx), and 6.1.7.d(x) have been added to the permit to provide a reasonable assurance that the facility qualifies for avoidance of the NO_x limit under 40 CFR 60 Subpart Db by calculating and maintaining records of the annual capacity factor for the boiler. Condition 6.2.60 has also been modified to require the facility to maintain the annual capacity calculation for the Waste Fuel Boiler for each calendar month.

Comment 10 – Waste Fuel Boiler WF

Inland would request that Permit condition 3.4.32 be revised to be based on Rule (g) exactly as written:

The Permittee shall not discharge into the atmosphere from the Waste Fuel Boiler WF any gases, which contain sulfur dioxide in excess of 0.80 pounds per million BTU heat input derived from liquid fossil fuel or derived from liquid fossil oil and wood residue, while firing fuel oil alone or fuel oil with wood residue.

It is our understanding that this limit will only apply to sulfur dioxide emission “derived” from the combustion of fuel oil in the boiler. The Mill is proposing to only burn low sulfur fuel oil (0.5% sulfur), which is the equivalent of 0.51 pounds of sulfur dioxide per MMBtu assuming no emission control. The unit will therefore show compliance with this limit by assuring that the fuel oil burned in the unit is always low sulfur fuel oil. The limit does not, however, apply to the combustion of other sulfur containing fuels such as Tire Derived Fuel (TDF), waste water sludge, and process off gases (HVLC NCGs).

EPD Response: The language proposed by the facility is acceptable and the changes have been made as requested. In addition, the facility’s understanding of the limit’s applicability is correct. The sulfur dioxide limit in Georgia Rule (g) regulates only those sulfur dioxide emissions that result from burning fuel. It does not apply to sulfur dioxide emissions due to combusting NCGs or fuels not specified in the rule. Inland can demonstrate compliance with the limit by burning fuel oil with a sulfur content of 0.5 weight percent or less.

Comment 11 – Administrative / Recovery Furnace 5

Inland requests that the first sentence in Permit condition 4.2.20 b. on page 20 be modified as follows:

- b. Performance tests for total reduced sulfur, hydrogen sulfide (hydrogen disulfide) and opacity while burning black liquor solids. The hydrogen sulfide results will be used to calculate the percentage of H₂S contained in the TRS emitted from the furnace.

It is assumed that the draft was intended to read hydrogen sulfide (H₂S). The testing will also be used to determine the amount of H₂S contained in the TRS (see comment 17).

EPD Response: The typographical error has been corrected (See response to Comment 6). In addition, it is acceptable to use performance testing to determine the percentage of H₂S contained in the TRS gases emitted from the furnace (See response to Comment 17). The changes have been made as requested.

Comment 12 – Recovery Furnace 5

The Mill requests the deletion of permit condition 4.2.20 e on page 20. This permit condition requires sulfur dioxide testing of the No. 5 Recovery Furnace when burning fuel oil only. The Mill is proposing to only fire low sulfur (0.5% sulfur) fuel oil (as is currently done). The sulfur content of the fuel oil will be sampled and certified by the fuel supplier (as is currently done) to insure compliance with this condition. The emission calculations assume that all sulfur contained in the fuel oil will be emitted as sulfur dioxide when not being co-fired with black liquor solids. The Mill, therefore, considers this test unnecessary.

EPD Response: The EPD agrees with the comment. It is highly unlikely that the facility would exceed the 486 lb/hr SO₂ emission rate based on the maximum fuel oil firing rate for the furnace, the maximum allowable sulfur content of the oil, and assuming that all sulfur in the oil is converted to sulfur dioxide. The testing requirement for sulfur dioxide while burning fuel oil only has been removed. The facility will still be required to conduct performance testing for sulfur dioxide while burning black liquor solids. Condition 4.2.20.e has been deleted.

Comment 13 – Waste Fuel Boiler WF

Permit condition 4.2.23.b on page 22 requires testing for CO and VOC. The Mill agrees with the testing requirement. However, the permit condition states “the test report shall contain data that demonstrates that the CO CEMS is a suitable surrogate for VOC emissions.” The Mill requests deletion of this requirement since EPD has already accepted CO as a surrogate for VOCs, and this is supported by EPA’s position in developing numerous MACT standards which use CO as a surrogate for Volatile compounds (HAPs in the case of the MACT standards). Since further demonstration should not be necessary, the Mill requests that the test report requirement for containing data that demonstrates that CO is a surrogate for VOC emissions be deleted.

In addition, the Mill requests that the language be changed so that the permit condition reads “furnace” temperature instead of “combustion” temperature. A thermocouple could not reliably read the very high temperatures at the center point of combustion (which may be inferred by this description); therefore, it is recommended that the monitor be located downstream of the flame, but inside the furnace.

EPD Response: The EPD understands the facility’s concern with the language in Condition 4.2.23.b. The language was not intended to question the validity of the CO/VOC relationship, but rather to further clarify the requirement to monitor CO as a surrogate for VOC. Further, the facility is correct that EPA standards (the Boiler MACT in particular) prescribe monitoring CO with a CEMS as a surrogate for organic compounds. Based on this information the EPD has deleted the phrase as requested. It should be noted that Condition 4.2.23.b contains requirements for ongoing performance testing based on the results of the initial VOC performance test. The EPD also possess the authority to require a performance test for any emission point at the source. These requirements, in conjunction with the CO CEMS, are sufficient to provide a reasonable assurance with the VOC BACT limit.

It should be noted that “combustion” temperature has frequently been used in previous permits and has never required the facility to measure the temperature at the center point of combustion. Nonetheless, the EPD finds it acceptable to require the facility to measure the furnace temperature downstream of the flame, but before substantial heat exchange occurs.

Comment 14 – Waste Fuel Boiler WF

Condition 4.2.25 on page 22 requires CO and VOC testing on the waste fuel boiler when HVLC NCGs are burned. This requirement would appear to be unnecessary when considering the requirements of EPA in the Subpart S MACT Standard as it relates to the combustion of HVLC gases in bark boilers. Subpart S only requires the introduction of the off gases in the flame zone of the boiler and does not require any additional monitoring. The EPA has concluded in the MACT standard, that by introducing these gases into the combustion zone of the boiler, the unit will be assured of achieving compliance with the standard.

EPD Response: Although the MACT standard referenced here only requires the introduction of gases into the boiler flame zone, the combustion of the HVLC gases must be addressed in terms of the PSD pollutants under review, including VOC. James Little, U.S. EPA, has concurred that this testing should be required. No changes will be made as a result of this comment.

Comment 15 – 40 CFR 63 Subpart MM

Permit condition 4.2.26 requires stack testing for particulate matter from Recovery Furnace 5, Smelt Tank 5, Lime Kiln 1A, and Lime Kiln 2A to show compliance with the Subpart MM MACT standard. The PM testing for all these units has recently been completed per the MACT standard and will be submitted to the agency by September 11, 2004. Inland would, therefore, request that this condition be deleted. The Mill is modifying the Recovery Furnace 5 as part of the project so Recovery Furnace 5 and Smelt Tank 5 will be retested for PM emissions per condition 4.2.19 and 4.2.20 within 60 days of achieving maximum production. The two lime kilns are not being modified. Additional testing of these two kilns is not warranted since they have just undergone PM stack testing.

EPD Response: Condition 4.2.46 was not intended to refer to an initial Subpart MM performance test. The condition refers to the performance testing that must be conducted after the modifications to Recovery Furnace 5 are complete. It should be noted that the particulate matter performance tests for the modified Recovery Furnace and the Smelt Tank are not included in Conditions 4.2.19 and 4.2.20. The testing requirements were placed separately in Condition 4.2.26 so that the accompanying Subpart MM conditions could all be included under the same section heading of “40 CFR 63 Subpart MM.”

The testing requirements for the Lime Kilns were added to the permit based on the possibility of an increase in lime mud throughput. The facility tested the lime kilns at the CaO production rate needed to meet post-modification linerboard capacity during the initial 40 CFR 63 Subpart MM performance test, therefore a new particulate matter performance tests is not necessary. Also, the Permittee is required to maintain daily records the lime mud feed rate, the percent lime mud solids, and lime mud density for the lime kilns. This data can be used by the Stationary Source Compliance Unit to determine if any performance tests are necessary in the future. The lime kiln testing requirements have been removed from Condition 4.2.26.

Comment 16 – Linerboard Machines

Permit condition 4.2.31 on page 23 requires the Mill to conduct a performance test for VOCs from the linerboard machines. The BACT standard proposed for the linerboard machines was a work practice standard and not a specific VOC emission limit. Comprehensive testing of all emissions sources from the linerboard machines is impractical and cost prohibitive. The Mill requests that this testing requirement be deleted. Instead, Inland recommends the preparation of a protocol to be submitted to EPD outlining the work practice standards that will be implemented to comply with BACT as required by condition 6.2.65. If upon review of the proposed work practice, EPD still feels that emissions testing is necessary, EPD and the Mill can agree on a representative testing scheme at that point.

EPD Response: The EPD agrees with the comment that the testing of linerboard machines is impractical and cost prohibitive. In response to this issue, the Division reviewed a BACT determination for the International Paper Mill located in Augusta, Georgia that was recently found to be acceptable during a review by the U.S. EPA Region 4.

The International Paper Mill linerboard VOC BACT determination found that no add-on controls were viable and no emission limit was set. Good work practice standards and engineering principles were prescribed for pollution prevention. Similarly, it was found that no add-on controls were viable for the Inland linerboard machines and good work practice standards were determined to be BACT. Based on this information, the Division finds it acceptable to remove the VOC limit and testing requirements from the permit. The facility will continue to be required to submit a protocol of the work practice standards that will be used to minimize emission from the machines. The phrase “for approval” has been added to Condition 6.2.65 to note that the final plan must meet the approval of the Division. If necessary, additional monitoring conditions will be added to the permit based on the protocol.

Comment 17 – Recovery Furnace 5

Permit condition 5.2.1 c. on page 24 requires monitoring for H₂S from the No. 5 Recovery Furnace. The Mill currently operates a TRS continuous emissions monitor (CEM) on the No. 5 Recovery Furnace. The Mill would propose to delete the H₂S monitor, because it would utilize the same technology as is currently employed for TRS and could not distinguish TRS from H₂S. This is a requirement of NSPS Subpart BB. In order to monitor and assure compliance with the H₂S limit, the Mill proposes the completion of a single H₂S stack test to be completed along with the TRS stack test (see comment 11). This test would allow the Mill to determine the percent of H₂S in the TRS emitted from the boiler. The mill could then apply that percent to the result of the TRS monitor to determine the amount of H₂S on a continuous basis. See comment 21 also.

EPD Response: The Division agrees the proposal to conduct a performance test for H₂S from the recovery furnace provided that H₂S be designated as an on-going performance test under Conditions 4.2.1 and 4.2.2. The changes have been made as requested and the on-going testing requirements have been added to Conditions 4.2.1 and 4.2.2.

Comment 18 – Recovery Furnace 5

Permit condition 5.2.1 c. on page 24 lists “furnace oxygen” and “oxygen” on a dry basis separately. The Mill currently monitors oxygen in the stack of the furnace. This measurement is required at this location so that the measured TRS concentrations can be corrected to 8 % O₂. Inland’s understanding is that the EPD is proposing to monitor % oxygen concentration in the stack in order to demonstrate compliance with the CO and VOC emission limits from the recovery furnace. Listing furnace oxygen appears misleading because it suggested the Mill would be measuring oxygen content in the furnace itself. The Mill would therefore request that “furnace oxygen” be deleted from the condition. The Mill will continue to operate the oxygen monitor on the stack for TRS oxygen corrections as well as to demonstrate compliance with CO and VOC limits per condition 6.1.7 c. xvi. In order to be consistent with the rest of the permit application, The Mill requests that permit condition 6.1.7. xvi. be revised to replace the current “Furnace Oxygen concentration” with “oxygen concentration”. This change should also be made to condition 4.2.20 c.

EPD Response: After conversations with facility representatives and EPD staff, the EPD finds it acceptable to use the oxygen monitor, currently used for correcting TRS data, for CO/VOC surrogate monitoring. Reference to “furnace oxygen” has been removed from Condition 5.2.1.c. The following sentence has been added to the condition to clarify that the facility is using the monitor to determine compliance for CO/VOC and corrected TRS: The Permittee shall use the oxygen monitor to determine the flue gas oxygen concentration required to be determined in Condition 4.2.20.c. Also, the word “furnace” has been replaced with the word “flue” in Condition 4.2.20.c.

Comment 19 – Power Boiler 4 and Package Boiler 2

The Mill requests that the monitoring requirement for “furnace oxygen” as listed in permit condition 5.2.1 d. and i. be changed to just “oxygen” so that it is clear that the oxygen content of the flue gas is being measured in the Power Boiler 4 and the Package Boiler 2. In order to be consistent with the rest of the permit application, the Mill requests that permit condition 6.1.7. xvii. and xviii. be revised to replace the current “Furnace Oxygen concentration” with “oxygen concentration”. This change should also be made to condition 4.2.21 c. and 4.2.21 b.

EPD Response: See the response to Comment 18. The word “furnace” has been replaced by the word “flue” in all referenced conditions.

Comment 20 – Waste Fuel Boiler WF

The Mill requests the modification of permit condition 5.2.2 m. to read “furnace” temperature instead of “combustion” temperature. This would allow for the probe placement in the furnace in a location that the Mill can more reasonably monitor proper operation (combustion temperature would be at the center of the flame).

EPD Response: The change has been made as requested. The following sentence has also been added to the condition: The furnace temperature is to be measured inside the furnace, downstream of the flame, and before any substantial heat exchange occurs within the unit.

Comment 21 – Recovery Furnace 5

The Mill requests that permit condition 6.1.7 xxvi on page 32 be modified as follows (see condition 16):

xxvi. Any 12-hour period during which the average hydrogen disulfide concentration from Recovery Furnace 5, as calculated based on the TRS monitor and the percent H₂S contained in the TRS as determined by condition 4.2.20 b, measured and recorded in accordance with Condition 5.2.1c, is in excess of 4 ppm on a dry basis corrected to 8 percent oxygen.

EPD Response: See the response to Comment 17. The changes have been made as requested.

Comment 22 – Package Boiler 2

Permit condition 6.1.7 a. xxix. on page 32 should be modified to allow for one six minute period per hour of not more than 27% opacity per condition 3.3.68 b.

EPD Response: The EPD has reviewed the permits of other Georgia pulp and paper mills and has found the additional language to be acceptable. The change has been made as requested.

Comment 23 – Waste Fuel Boiler WF

The Mill requests that permit condition 6.1.7 a. xxxiii. on page 33 should be changed to 0.3 lb/MMBtu from 0.2 lb/MMBtu (See comment 9).

EPD Response: See the response to Comment 9.

Comment 24 – Waste Fuel Boiler WF

Delete permit condition 6.1.7 a. xxxiv. on page 33. As indicated in comment 14, the MACT Standard (Subpart S) does not require temperature monitoring in the furnace used to combust the HVLC gases. The temperature requirement is therefore not considered necessary.

EPD Response: The EPD agrees with the comment that 40 CFR 63 Subpart S does not require temperature monitoring for the destruction of HVLC gases in the flame zone of a boiler. However, the TRS/H₂S emissions are also being regulated under PSD. The facility proposed BACT for the Waste Fuel Boiler as the destruction of HVLC gases in the boiler at an efficiency of 99%). While the introduction of the HVLC gases into the boiler flame zone is adequate to demonstrate compliance with 40 CFR 63 Subpart S, the Division believes that an initial performance test and on-going temperature monitoring is necessary to demonstrate on-going compliance with the BACT requirements. In addition, the Division does not find continuous temperature monitoring to be overly burdensome.

Comment 25 – Waste Fuel Boiler WF

The Mill would request that permit condition 6.1.7 a. xxxvi. on page 33 be deleted. As indicated in comment 10, the state rule only applies to sulfur dioxide emissions derived from fossil fuel liquids and the unit will only be firing low sulfur fuel oil. The demonstration that the unit will only fire low sulfur fuel oil should therefore be sufficient to ensure continuous compliance with state rule (g).

EPD Response: The EPD agrees with the comment. As stated in the response to Comment 10, Georgia Rule (g) regulates only those sulfur dioxide emissions resulting directly from the combustion of fuel. The facility can demonstrate compliance with the rule by burning only fuel oil with a very low sulfur content as required by Condition 3.3.67.

It should be noted that the facility also has a PSD Avoidance limit for sulfur dioxide of 1,170 tons per year. The facility will demonstrate compliance with this limit using a sulfur dioxide CEMS. The presence of the Georgia Rule (g) in Condition 6.1.7.a implies that compliance with the limit is also based on CEMS data. The CEMS cannot be used to demonstrate compliance with Georgia Rule (g) on a consistent basis because the device cannot distinguish between fuel based sulfur dioxide and sulfur dioxide produced from incinerating TRS gases from the pulping process.

Comment 26 – Package Boiler 2

Permit condition 6.1.7 b. xix. on page 34 should limit fuel oil on the package boiler to 3 million gallons. See comment 7.

EPD Response: See the response to Comment 7.

Comment 27

Permit condition 7.14.1 on page 46 requires the Mill to shutdown the units to be decommissioned upon startup of the new/modified equipment. The Mill plans to complete the project in phases, starting with work to be done on the No. 5 Recovery Furnace. Several of the units to be decommissioned have already been shutdown. The No.3 and 4 smelt dissolving tanks, Lime Kiln 3A, and the H-washer system have been decommissioned and will no longer be operated. The No.3 and No. 4 Recovery Furnaces have also been decommissioned as recovery furnaces and will only be operating in a limited capacity to fire fuel oil in order to supply steam to the Mill until the remaining elements of the project are completed. The decommissioning of Power Boilers 1, 2, and 3 and the elimination of all use of the No. 4 Recovery Furnace will, however, not occur until all modifications are completed. Specifically, these unit cannot be decommissioned until the No. 3 Recovery Furnace has been converted to the new wood waste boiler, the modifications have been made to the No. 4 power boiler and the package boiler and they have gone through commissioning. Considering the complex phase in of equipment, the Mill would request the following additional (underlined portion) language for clarification:

7.14.1 Upon startup and stable operation of all of the new/ modified units listed in paragraph (a) of this condition, the units listed in paragraph (b) of this condition shall be permanently decommissioned.

EPD Response: The EPD recognizes that the mill optimization project is complex in terms of the order in which old units can be decommissioned and the new units can be brought online. As indicated, the facility has already shutdown several pieces of equipment and is operating other in a very limited capacity. Also, it is essential that the facility be able to operate the linerboard process, even in a limited capacity, during the modification period. Conditions such as 7.14.1 are most useful in cases of like replacement, such as installing a boiler to replace an old boiler. It is reasonable to then require that the old boiler be shutdown upon startup of the new unit.

The EPD has edited Condition 7.14.1 to read as follows as a result of this comment:

Upon completion of the Mill Optimization Project as described in Part 1.0 of this amendment and the commissioning of all new/modified units listed in paragraph (a) of this condition, the units listed in paragraph (b) of this condition shall be permanently decommissioned.

In a follow-up comment (October 7, 2004 email) the facility noted that Power Boiler 2 had been omitted from Condition 7.14.1.b. The unit has been added to the condition for those units to be decommissioned.

Also in a follow-up comment (October 7, 2004 email) the facility requested that the phrase “(cease operation as a recovery furnace)” be added to Condition 7.14.1.b after “Recovery Furnace 3. “ The phrase is to clarify that the unit will become the new Waste Fuel Boiler. The change has been made as requested.

Miscellaneous

The following comment was received from Annette White in an email dated September 8, 2004.

Can the EPD add an additional measurement unit to item 6.2.48 b (on page 42) so the production rate units matches the units in 6.2.48 a? Item b would then read as follows: "b. Calcium oxide (CaO) production rates in Mg/day or tons/day for Lime Kiln 1A and 2A." We still calculate our production rate in tons for our lime kilns.

EPD Response: The language has been added as requested. 40 CFR 63 Subpart MM allows facilities to keep records for CaO production in Mg/day or tons/day.

The following comment was received from Annette White in an email dated October 7, 2004.

In permit condition 3.1.4 of page 4 please add “(or none if the clean condensate alternative is utilized)” after the waste fuel boiler listed in the control device description column for the E, F, and G washers. This will then be consistent with the rest of the permit that shows CCA as a compliance option to burning the washer off gases in the waste fuel

boiler.

EPD Response: No changes will be made as a result of this comment. The EPD will change the language in the equipment list at such time that the facility develops and permits an acceptable CCA plan. The addition of this language in the equipment list is potentially confusing.

EPD CHANGES

Conditions in this amendment have been renumbered as needed due to the addition or deletion of requirements based on facility and U.S. EPA comments. The condition numbers listed in the Emissions Unit table have also been updated as necessary.

The U.S. EPA finalized 40 CFR Part 63 DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters on September 13, 2004, just prior to the issuance of this permit. The facility is subject to this rule for the operation of Power Boiler 4 and Waste Fuel Boiler WF. As a result two general applicability conditions have been added to Part 3.0 of the permit (new Conditions 3.3.80 and 3.3.81). Also, reference to Section 112(j) of the CAA has been removed from the permit (formerly Conditions 3.3.79 and 6.2.66). Reference to 112(j) is no longer needed because the U.S. EPA has promulgated the MACT standard.

An editing mark that erroneously appeared in Condition 6.2.1.c of the final draft permit has been removed. The facility also noted this typographical error in a follow-up comment (October 7, 2004 email).

APPENDIX A

AIR QUALITY PERMIT

2631-115-0021-V-01-4

APPENDIX B

**WRITTEN COMMENTS
RECEIVED DURING
COMMENT PERIOD**