

# Rayonier

Performance Fibers

RECEIVED *Fernandina Mill*

DEC 19 2005

December 15, 2005

BUREAU OF AIR REGULATION

Jeffery F. Koerner  
Bureau of Air Resources  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Application for Air Construction Permit  
Project: Power Boiler Replacement and Digester Production Increase  
Project No. 0890004-018-AC  
Response to Request for Additional Information

Dear Mr. Koerner:

I am responding to your letter dated December 7, 2005 requesting additional information regarding the above referenced Application. I respond to your questions in the order presented in your December 7 letter.

1. You have requested that the projection of emissions be combined for both projects. The projected emissions changes from No. 6 boiler were presented in Table 10 on page 20 of the Narrative document that accompanied the application forms and the summary of emissions changes for No. 6 digester appeared in Table 13 on page 32. Below we have combined these two Tables.

Pollutant	Emission Change No. 6 PB Original Ton/Yr.	Emission Change No. 6 PB Adjusted Ton/Yr.	Emission Change No. 6 Digester Original Ton/Yr.	Emission Change No. 6 Digester Adjusted Ton/Yr.	Total Combined Emissions Change Ton/Yr.	PSD Significance Level Ton/Yr.
PM	(138)	(138)	NA	NA	(138)	25
PM10	(105)	(105)	NA	NA	(105)	15
SO <sub>2</sub>	39	28.1	10.9	10.9	39	40
NO <sub>x</sub>	39	39	NA	NA	39	40
CO	(591)	(591)	25.12	25.12	(565.88)	100
VOC	(45)	3.94	26.77	26.77	30.71	40

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The baseline sulfur dioxide emissions from the old boilers is 181.96 tons/yr. which are used for netting plus the 39 tons/yr. available from the Significance level to avoid PSD permitting. Thus boiler emissions can increase from 181.96 to 220.96 tons/yr.

This 220.96 tons/yr. includes:

- 44.72 tons/yr. allowed from 11,925 thousand gallons annual No. 6 fuel oil usage,
- 10.90 tons/yr. from the 16.70 percent production increase; and
- 165.38 tons/yr. from TDF

220.96 total ton/yr. SO<sub>2</sub>

Sulfur dioxide emissions from TDF are not required to be scrubbed as TDF is not oil. Thus the maximum SO<sub>2</sub> emissions allowed without triggering PSD is assigned to TDF. This does not change the annual average SO<sub>2</sub> emission rate of 0.1121 lb./mmBtu. This does require Rayonier to reduce the emissions from TDF by 63%. Since the SO<sub>2</sub> CAP does not change we have not resubmitted a revised section F1 for SO<sub>2</sub>. We have submitted a Section F1 for VOCs reflecting the discussion below.

The carbon monoxide emission rate we used for the new boiler is based on the vendor guarantee of 0.25 lb. CO per mmBtu heat input. We used for estimation 0.3 lb./mmBtu.

The study provided by Babcock and Wilcox on the design for this boiler indicated VOC emissions of 0.002 lb. VOC/mmBtu. However, we estimated emissions from new No. 6 boiler based on an emission test from a similar boiler at Interstate Paper where VOC's were tested at 1.1 tons per year as carbon. This is an average of 3 one-hour test runs. This boiler is slightly smaller but similar to No. 6 and had an emission rate of 0.000837 lb./mmBtu. If the B and W study emission factor of 0.002 is used annual VOC emissions increase to 3.94 tons/year. If the test result of 0.000837 is used, the emissions increases would be 1.65 tons/year. Neither emission rate would cause emission increases to exceed the PSD Significant Levels.

There are two ways in which the Table above is conservative. First, we ignore the reduction in VOC from the shutdown of the old boilers. Also this analysis is completed for the 8% production increase because it will result in the maximum VOC increase. The 16% production increase includes the HCE blow gas heat recovery which accomplishes a large net VOC reduction overall.

We have also modified the Table to remove all of the VOC reductions previously taken. The VOC emissions used in the original application included emissions attributable to a waste caustic source from the bleach plant used as the scrubbing media, as well as the emissions from the older inefficient boilers. For cost and fresh water conservation reasons we still intend to use that caustic source as a scrubbing media. It is impossible to tell how much of the VOC's are attributable to the old boilers and how much to the waste caustic

source. As a conservative approach to determining the VOC increases due to the boiler we just ignored possible decreases attributable to the old boilers and added the 3.94 tons/year attributable to the new boiler to the VOC's expected from No.6 digester without the reductions from the HCE blow heat recovery project. Even so, the total VOC emission increases are 30.71 tons/year or less than the PSD Significant Level. A Section F1 of the application form for VOCs is enclosed.

2. A partial response to this question is provided in the paragraph above. Attached are new pages to the application form providing VOC emission factors and rates using the 0.002 lb./mmBtu vendor study referenced above. We expect to stack test this boiler after it has started up and would have no objections to including VOC's in the suite of pollutants tested.
  
3. No. 6 boiler was originally permitted by Smurfit as a 540 mmBtu/hour boiler, 397 mmBtu/hour from coal and 143 mmBtu/hour from bark. On an annual basis, Rayonier will operate No.6 boiler at a heat input of 450 mmBtu/hour. However, since Rayonier is expecting to operate this boiler at 525 mmBtu/hr for limited periods of time when the recovery boiler is down this analysis is completed for that operating rate. A revised Table 3 is provided below with the emission rates of the two boilers presented in units of lbs./hour based on the permitted rates and heat input while Smurfit operated the boiler and the expected emission and heat input rates that Rayonier is permitting.

Table 3. 40 CFR Part 60 Subpart D limits in 1983 (Revised)

<b>Pollutant</b>	<b>Limit in Smurfit Permit</b>	<b>Emissions from 540 mmBtu/hr Smurfit Boiler</b>	<b>Limit Expected for Rayonier No. 6 boiler</b>	<b>Emissions from 525 mmBtu/hr Rayonier No.6</b>
	<b>Lbs./mmBtu unless indicated</b>	<b>Lbs./hr unless indicated</b>	<b>Lb./mmBtu unless indicated</b>	<b>Lbs./hr unless indicated</b>
PM	0.1	54	0.07	36.8
Opacity	=20% except 6/hr<27%	NA	=20% except 6/hr<27%	NA
SO <sub>2</sub> solid fossil fuel	1.2	476.4	NA	NA
SO <sub>2</sub> liquid fossil fuel	0.8	NA	0.8	168.0
NO <sub>x</sub>	0.3	162.0	0.1928	101.2

It is clear that the mass hourly emission rate does not increase and the boiler is not subject to Federal New Source Performance Standards.

If you have questions regarding this response please contact David Tudor at (904) 277-1452, cell (904) 557-8332 or e-mail: [david.tudor@rayonier.com](mailto:david.tudor@rayonier.com), or Dick Hopper at (904) 277-1480, e-mail: [dick.hopper@rayonier.com](mailto:dick.hopper@rayonier.com).

Sincerely,

A handwritten signature in black ink that reads "Jack Perrett". The signature is written in a cursive style with a large, looped initial "J".

Jack Perrett  
General Manager

cc: Bruce Mitchel  
Chris Kirts

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

(Optional for unregulated emissions units.)

**Potential/Estimated Fugitive Emissions**

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

1. Pollutant Emitted: <b>VOC</b>		2. Total Percent Efficiency of Control: <b>99.9% +</b>	
3. Potential Emissions: <b>1.05 lb/hour      3.94 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>NA to tons/year</b>			
6. Emission Factor: <b>0.002 lb/mmBtu</b>  Reference: <b>Boiler Manufacturer Study</b>		7. Emissions Method Code: <b>5</b>	
8. Calculation of Emissions: hrly: <b>525 mmBtu/hr x 0.002 lb/mmBtu = 1.05 lbs/hr</b>  ann: <b>450 mmBtu/hr x 0.002 lb/mmBtu x 1/2000 tons/lbs x 8760 hr/year = 3.94 TPY</b>			
9. Pollutant Potential/Estimated Fugitive Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2] of [2]

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**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**

**ALLOWABLE EMISSIONS**

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

**Allowable Emissions** Allowable Emissions of

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                  tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): <b>There are no regulation based emission limits for VOCs applicable to this boiler.</b>	

**Allowable Emissions** Allowable Emissions of

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

**Allowable Emissions** Allowable Emissions of

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

**Professional Engineer Certification**

1. Professional Engineer Name: <b>David A. Buff</b> Registration Number: <b>19011</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Golder Associates Inc.**</b> Street Address: <b>6241 NW 23<sup>rd</sup> Street, Suite 500</b> City: <b>Gainesville</b> State: <b>FL</b> Zip Code: <b>32653-1500</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 336-5600</b> ext. <b>545</b> Fax: <b>(352) 336-6603</b>
4. Professional Engineer Email Address: <b>dbuff@golder.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature <u>David A. Buff</u> Date <u>12/16/05</u>  (seal)

\* Attach any exception to certification statement.

\*\* Board of Professional Engineers Certificate of Authorization #00001670