Rayonier

Performance Fibers

Fernandina Mill

January 19, 2006

Mr. Jeffery F. Koerner, P. E.
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Request to Install the No. 6 Power Boiler and the No. 6 Batch Digester
Air Construction Project No. 08900004-018-AC

Dear Mr. Koerner:

I am responding to the questions in your January 18, 2006 letter in the order in which you have asked them.

Attached is a revised Process Description. You previously requested a process description. We have added to the end of that description many of the answers to your questions and these answers will reference that document.

1. Updated process flow diagram.
See page 9 of attached process description. There we provide separate process flow diagrams for the digester/washer system, the HCE system with blow heat recovery, and evaporator system with the new HCE evaporator train.

2. Provide the appropriate application pages for the HCE evaporators.
Attached.

3. ClO_2 plant versus ClO_2 tower.
At one time we thought we would need a new ClO_2 tower, but now it appears the tower will not be needed. We included in the application for completeness. We wish to remove it from the application. A ClO_2 plant was included in the application but it is clear that we would be purchasing a used plant and can not at this time specify the process. Therefore we are removing the ClO_2 plant from the application as well. It is understood that a separate application would be required for this equipment.

4. Describe the HCE evaporator project, including the pre-HCE thickener, the post HCE washer etc.
The HCE evaporators, the HCE washer press roll and the new post HCE washers are not directly connected. The HCE evaporator simply increases evaporation as the way to prepare HCE for sale. Additional evaporation is needed to accommodate the production increase. The HCE washer press roll has two functions. First, it squeezes more HCE out of the pulp prior to future bleach stages to increase their effectiveness and reduce subsequent bleaching chemical

requirements. Secondly in doing so, the pressing increases the solids concentration in the HCE by a measurable percentage that minimizes some of the water which must be removed in the evaporators. The new HCE washer will be needed at the 175,000 ADMT/yr production rate because the washer we are presently using as the third post HCE stage washer will be needed to maintain quality at the new rate in another stage in the bleach plant.

5. Provide a schedule and approximate dates for installation of the proposed improvements.
See page 8 of the attached Process Description. We expect to begin the work to get to 162,000 AMDT/yr immediately. The work to achieving 175,000 ADMT/yr will not begin until 2008. We have scheduled all of this work to begin at our normal shutdown period during the spring. The 2008 date is quite tentative. It is doubtful all projects would be completed that year. It is difficult to determine which we would start with.

6. Has the previous netting analysis changed as a result of the substituting evaporation for the membrane technology first proposed?
Fortunately the netting analysis has not changed. In the original analysis we had not taken a reduction in the HCE evaporation from switching to membrane technology. We increased all evaporator emissions by the production increases. Therefore, the netting analysis already included the new evaporation emissions. This is also explained in the additions to the revised Process Description attached.

7. What is the caustic chemical used in the HCE stage?
Sodium Hydroxide (NaOH).

Sincerely,

F. J. Perrett by C.A. M-Donald

F. J. Perrett
General Manager

cc: Chris Kirts, DEP – NED
David Tudor, Contact, RPF
David A. Buff. P.E., GAI

Process Description

The Rayonier Fernandina Chemical Cellulose Sulfite Pulp Mill has been in operation at this site since 1939 and currently employs approximately 280 people. The mill uses a sulfite (ammonia-base) process to produce various grades of chemical cellulose from pine wood-chips. There are only two other pulp mills located in USA that produce products similar to the Fernandina Mill and neither of these mills use the same type of manufacturing process. This plant produces approximately 10 different grades of cellulose each with different specifications and customers. The amount of each grade of product that is produced is based on market demand. The cellulose produced at this mill goes into such products as plastics, photographic film, LCD screens, paints, cigarette filters, pharmaceuticals, food products, cosmetics and textiles. Customers of these products have stringent quality requirements. This mill produces approximately 150,000 tons of performance fibers annually.

The sulfite process utilizes a sulfurous acid and ammonium bisulfite cooking solution to chemically separate the lignin from the cellulose. This is accomplished in six batch pressure vessels called digesters. The "cooking" process requires approximately 6 hours. The pulp and spent cooking solution [SSL – spent sulfite liquor] are separated over vacuum washers called red stock washers. The pulp continues into the screening area while the SSL is pumped to the evaporators. The cooking solution is prepared in the "acid plant". All of the sulfur dioxide which is not captured in the acid making or emitted from the digestion and red stock washer processes is collected and scrubbed in the vent gas scrubber utilizing caustic soda. In this scrubbing tower is a second section for condensing a cooking process by-product, methanol. The methanol is condensed and sent to the effluent treatment system for biological digestion.

Unbleached sulfite pulp from the digesters has un-cooked woody materials called knots and tailings which must be screened from the pulp. Knotters and Cowan screens are utilized to remove these materials. The knots and tailings are collected and pressed for utilization as fuel in the power boilers.

Pulp exiting the screening operation enters the bleach plant. One bleaching stage is called Hot Caustic Extraction [HCE]. This is a batch stage utilizing caustic soda to remove small chain cellulose molecules called hemi-cellulose from the pulp. This process uses small pressure vessels called HCE cells. No sulfur compounds are used in this stage. A spent solution washed from the pulp after this stage is called hot caustic extract [HCE] and is sold to kraft mills for its sodium content and energy value. This stage also has methanol as a by product in the vent gas, but presently it is not captured.

Pulp leaving the hot caustic stage is further purified in continuous and batch stages using peroxide, chlorine dioxide, chlorine, sodium hydroxide, and sodium hypochlorite depending on the pulp grade specifications. Following these "bleaching" stages the pulp passes through centrifugal dirt cleaners on the way to the pulp machine. The pulp machine forms the sheet by draining water from pulp slurry containing 99% water over a moving wire to a consistency of 50% water. The remainder of the water is removed by passing the pulp sheet over pressing and drying cylinders heated internally with steam. The sheet is wound on a "jumbo" roll which when completed weighs over 10 tons. The final sheet only has about 7% moisture. No coating occurs on any of the grades produced.

The jumbo rolls are transported to the finishing room where the pulp sheet is cut into smaller rolls or sheets which fit the customers' processes. The finished rolls or bales are shipped to the customer based on their order. No pulp is produced without an order due to the very specific quality requirements and sheet size for each customer.

The digestion, hot caustic extraction stage and pulp machine are high users of steam for heating. The steam is produced in three 1939 vintage power boilers utilizing bark and number 6 oil for fuel. Steam is also used to produce about 90 percent of the mill's electricity needs. The boiler's emissions are cleaned with venturi-type scrubbers.

The spent sulfite liquor [SSL] from the digestion process and the hot caustic extract [HCE] are pumped to the evaporators. From the evaporators the SSL is burned in the recovery boiler. This 1976 boiler provides steam for the evaporators and its emissions are scrubbed for sulfur

dioxide removal using an ammonia solution. The ammonium bisulfite produced in the scrubber is used for cooking acid make-up. The emissions are further cleaned with mist filters that remove the ammonium sulfate particulate formed in the scrubber. Methanol from the evaporator vents is piped to condensers which collect the methanol and send it to the biological treatment system.

Boiler Project Description

Rayonier is planning to replace three existing power boilers at its Fernandina Beach dissolving sulfite pulp mill with one bubbling bed boiler. Self produced bark will provide most of the fuel, but knots, landscape waste and possibly a small amount of tire derived fuel will be fired at times. Minimal oil will be fired, mostly during periods when the solid fuel feed system is down. The mill has three small power boilers, all were installed prior to 1962, Power Boiler No. 1 is fired with No. 6 fuel oil only and has a heat input of 185mmBtu/hr. Power Boiler No. 2 is fired with bark and No. 6 fuel oil and has a heat input of 218 mmBtu/hr. Power Boiler No. 3, Title V Emission Unit PB03, is fired with bark and No. 6 fuel oil and has a heat input of 245 mmBtu/hr. These boilers are aging and maintenance costs have escalated to the point where replacement is cost effective. They will be decommissioned and therefore the emissions from these boilers will be used to offset the emissions from the replacement boiler. The replacement boiler will be designated PB06.

A used traveling grate boiler will be purchased which will be converted into a bubbling bed boiler equipped with an electrostatic precipitator followed by an alkaline scrubber. Provisions will be made to install Selective Non-Catalytic Reduction ("SNCR") for NOX control should it be necessary to meet the emission limit proposed. A newer boiler will reduce most emissions because it will have to meet more stringent New Source Performance Standards ("NSPS"), (40 CFR Part 60 Subpart D) and the recently promulgated Maximum Available Control Technology Standards ("Boiler MACT", 40 CFR Part 63, Subpart DDDDD for existing power boilers). The boiler being purchased was originally constructed in 1983. A reconstruction analysis demonstrates this boiler has not been reconstructed. Therefore, it remains subject to the Subpart D standard, of Part 60. Not being reconstructed also means the boiler is regarded as an existing boiler under Boiler MACT.

The boiler will be sized for 265,000 lbs of 900 psi steam per hour at 850 degrees Fahrenheit resulting in an annual average heat input of 450 mmBtu/hr. Occasionally heat inputs could be 525 mmBtu to partially compensate for outages of the recovery boiler, the only other steam generator at the facility. However an annual emission limit based on 450 mmBtu/hr is requested.

It will be located adjacent to the digesters east of the mill. Once constructed and fully operational, it will be connected to the mill steam headers. It and the recovery boiler will be the sole steam producers used by the mill. Eventually the existing boilers will be dismantled.

A large electrostatic precipitator (ESP) for the removal of particulate matter followed by an alkali scrubber for the removal of SO_2 will be installed to enable the boiler to meet the new emission limits. The technology used in the boiler and its new large pollution control devices will enable compliance with the new regulations referenced above and will allow a greater percentage of bark and possibly other solid fuels such as Tire Derived Fuel (TDF) in the fuel mix. Continuous NO_x, SO_2, flow, CO, O_2 and opacity monitors are proposed for the new boiler.

Production Increase Project Description

This permit application also includes a production increase to accommodate the full production enabled by the installation of No. 6 digester in 1998. Rayonier undertook a program to entirely reline each of its existing 5 digesters with new refractory and replace any weakened or corroded metal while it was exposed. To accomplish this Rayonier rotated a digester out of production for an extended period of time. In order to avoid lost production for orders previously taken an additional (No. 6) digester was added. Permitting of No. 6 digester was facilitated by inclusion of a production limit on the Title V operating permit of 153,205 ADMT per year. This application revisits that production limit and seeks to increase that limit to the full production capability of No. 6 digester.

Jeff and Bruce, just replace the last page on what we originally sent with this to address the production increase projects.

Minimal additional equipment will be needed to achieve the 162,000 AMDT/yr production increase requested in this application. An increase in machine drying capacity will be required. This will be accomplished by upgrading the dryer can system over which the pulp passes to dry the pulp; including increasing the drying steam pressure inside the cans, installing a new headbox to increase the width of the pulp web across the machine and to improve machine sheet uniformity at higher machine speeds, and upgrading control and water addition systems. There are no emissions associated with machine operations because there is no coating and the pulp has been purified to the point there are no remaining organics to emit. Also, three new evaporator modules will be added to form a new evaporator train to thicken the additional HCE produced by the increase in production. These evaporators will be sufficient to handle all the additional HCE for the 175,000 ADMT/yr production rate when accompanied with HCE washer upgrades. Also to achieve this production rate the mill will add a post-HCE washer press roll. The press roll will result in higher pulp consistency from the washer and higher solids concentration in the HCE liquor from the washer to the evaporators. This merely increases the effectiveness of the HCE collection system. There are no emissions from the press roll as no chemical reactions are taking place; water is being removed from the pulp. The condensed water from these evaporators may be usable, if not it will go directly to the water treatment plant. The vapors that are not condensed will go first to the existing methanol scrubber. The condensed organics from this condenser will go to the wastewater treatment plant. Water9 was used to estimate the amount of VOCs stripped by the aerators. The emission estimates provided assumed no control from the HCE stage up to 162,000 ADMT. For 175,000 ADMT/yr the calculations assume the HCE blow heat recovery project is installed.

To achieve 175,000 ADMT/yr the mill will further increase the drying capacity of the machine by further increasing drying steam pressure. Other potential pulp machine upgrades that may be needed depending on the effectiveness of the initial improvements involve final-sheet

cooling, Fourdrinier wire vacuum system improvements, ventilation system upgrades and drive system enhancements. This is all non-emitting equipment. A new HCE cell will be added to handle the increased volume of pulp at the 175,000 ADMT/yr rate. Emissions from this new cell as well as all the existing cells will be controlled using a blow heat recovery system that will be installed and operational before exceeding the 162,000 ADMT/yr rate. With the continuing trend toward higher purity pulp production an additional washer will likely be required for the caustic extraction stages to reach the 175,000 ADMT/yr rate. This washer would be after release and capture of VOCs from the HCE blow heat recovery system and would have no sulfur dioxide or chlorine emissions.

To ensure VOC emissions increases are less than the PSD Significance Level the mill will undertake a project to capture blow heat from one of the bleach plant stages that is the most significant VOC emissions source. The HCE blow heat capture system will be very similar to the systems used on Kraft digesters for the recovery of heat except it will be considerably smaller and there will be no TRS gases as there is no sulfur in the pulp at this stage. The blow gas will be condensed to extract the heat and the condensate will contain the VOCs from the emissions of all the HCE cells. This condensate will be sent to the biological wastewater treatment system where it will be biologically destroyed. The emissions from the HCE blow tank have been measured. The reduction in emissions that will be achieved has been calculated at greater than 74% control of HCE blow emissions. Other emissions around the bleach plant were increased proportional to the production increase. The reduction in VOC emissions achieved by the new more efficient boiler and the HCE blow heat recovery more than offset increases in VOCs due to the 162,000 or the 175,000 ADMT/year production levels. All other pollutants do not increase sufficiently to tripper PSD review. Based on AORs the emissions for pertinent segments of the mill have been quantified and increased proportional to the production increase. This emissions increase is presented in the table below. The only additional control included in this estimate is the reduction in VOC achieved by the HCE blow heat recovery.

Year	VOC		SO_2		CO	
Pulping Systems (VGS)						
2000			79.00		0	
2001			51.84		0	
2002			21.36		0	
2003	26.72		13.34		0	
2004	46.52		11.25		0	
Baseline	36.62		65.42		NA	
Increase 8%		2.930		10.925		0
Increase 16.70%		6.116				
Bleaching Systems						
2003	178.17		0			
2004	177.84		0			
Baseline	178.00		NA			
HCE blow heat recovery	(71.20)					
Increase 8% no heat recovery project		14.24				
Increase 16.70% and recovery project		(41.47)				25.12
Evaporators						
2003	50.72		0		0	
2004	56.72		0		0	
Baseline	53.72		NA		NA	
Increase 8%		4.297		0		0
Increase 16.70%		8.971				
Wastewater Treatment System						
2003	76.89		0		0	
2004	55.64		0		0	
Baseline	66.26		NA		NA	
Increase 8%		5.301		0		0
Increase 16.70%		11.065				
Grand Total at 8% increase and no heat recovery project		26.77		10.925		
Grand Total at 16.70% increase and heat recovery project		(15.318)				25.12
Significance Level		40		40		100

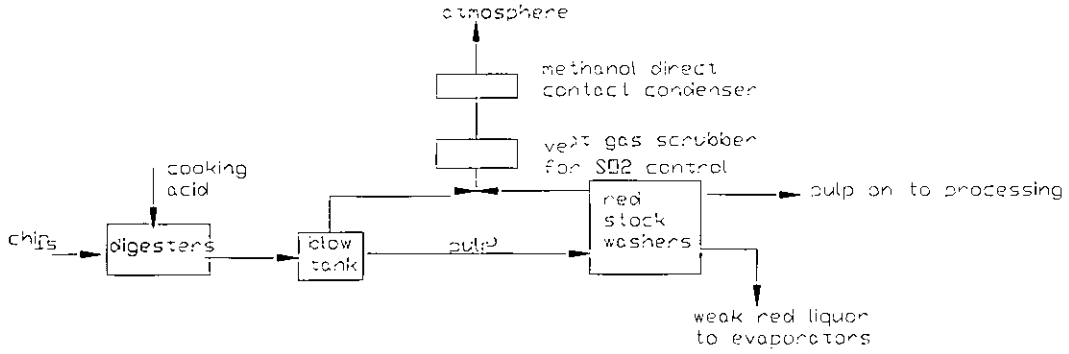
A tentative schedule for the various projects in the phased production increase is as follows:

Add new HCE washer press roll	Feb. 2006
First machine improvements to drying and headbox	Feb. 2007
Add new evaporator train	Feb. 2007
Install HCE Blow Heat Recovery	Feb. 2008
Add New HCE Cell	Feb. 2008
Install new HCE washer	Feb. 2008
Second machine drying and speed increase projects	Feb. 2008
Install new post HCE washer	Feb. 2008

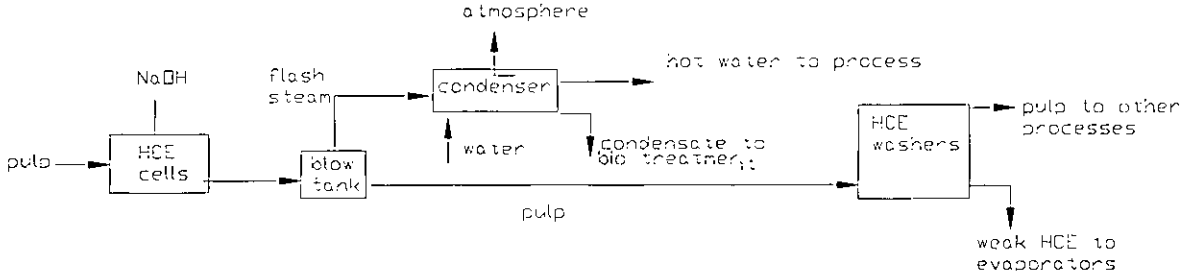
The original application included membrane technology to concentration the additional HCE. However, all of the baseline evaporator emissions were increased in the above table to estimate new emissions after production increases to 162,000 and 175,000. This assumes evaporation would be used to handle both the red liquor and the HCE. PSD permitting is not triggered even if all HCE produced at the 162,000 ADMT/yr rate were evaporated. At the 175,000 production rate, the 60% VOC collection efficiency used for the HCE blow heat recovery system is more than enough to offset any increase in evaporator emissions.

Flow sheet for Digester/Washer methanol control, HCE stage blow heat recovery, and evaporators.

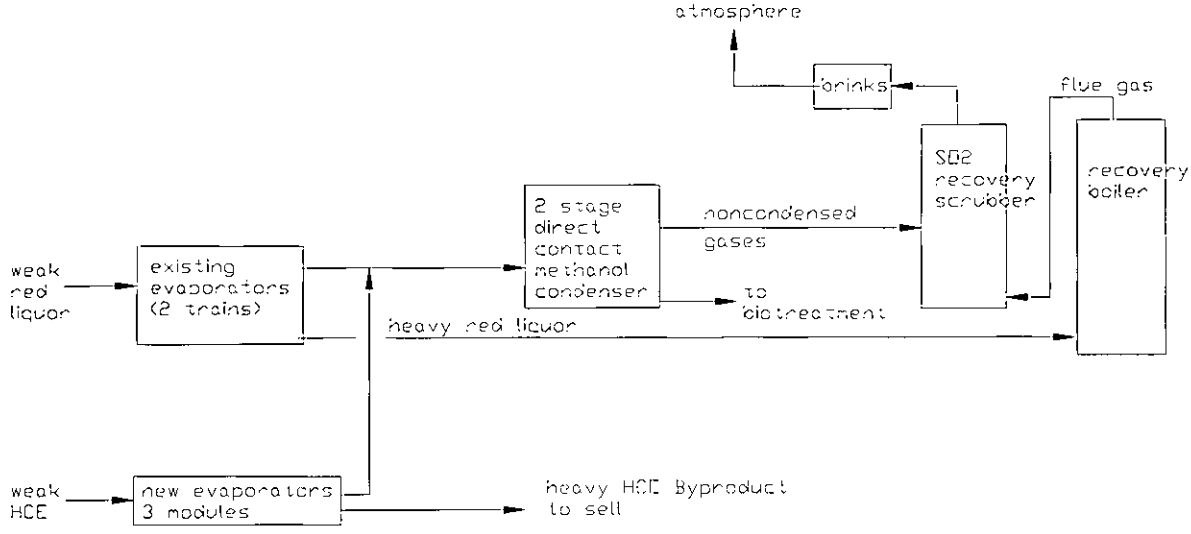
Flow sheet for Digester/Washer methanol control



HCE Stage Blow Heat Recovery



Evaporators



III. EMISSIONS UNIT INFORMATION - 021

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

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

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

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

EMISSIONS UNIT INFORMATION
Section [1] of [1]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section: **This emission unit comprises all evaporators. There are two existing evaporator trains. This construction permit adds one new train comprised of 3 evaporation bodies or modules which will be used to evaporate HCE.**

3. Emissions Unit Identification Number: **O21**

4.Emissions Unit Status Code: **A**	5. Commence Construction Date: **2/2006**	6.Initial Startup Date: **4/2007**	7.Emissions Unit Major Group SIC Code: **26**	8. Acid Rain Unit? [ ] Yes [X] No

9. Package Unit: **NA**
Manufacturer: Model Number:

10. Generator Nameplate Rating: **NA** MW

11. Emissions Unit Comment:

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Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

This emission unit includes all evaporators. All evaporators vent through a common condenser used to collect methanol then vented to atmosphere via the sulfur dioxide recovery scrubber for the recovery boiler.

This application adds 3 evaporator modules or bodies to form a new evaporator train to be used to increase the solids concentration of weak HCE, a byproduct stream from the manufacturing process. HCE when thickened can be used by Kraft mills as a sodium source.

Vapors from the evaporators are sent to a two stage direct contact condenser. The condenser cools the evaporator emissions to remove methanol. The liquid from the condenser is sent to the biological waste water treatment plant where the methanol and any other captured VOCs are destroyed.

2. Control Device or Method Code(s): **050**

EMISSIONS UNIT INFORMATION
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B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1.	Maximum Process or Throughput Rate:
2.	Maximum Production Rate: **237,922 unbleached air dried short ton**
3.	Maximum Heat Input Rate: million Btu/hr **NA**
4.	Maximum Incineration Rate: pounds/hr **NA** tons/day
5.	Requested Maximum Operating Schedule: **8** hours/day **7** days/week **52** weeks/year **8760** hours/year
6.	Operating Capacity/Schedule Comment:

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

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **RB**		2. Emission Point Type Code: **3**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **See Attachment 1 for Flow Sheet**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **O21**		
5. Discharge Type Code: **V**	6. Stack Height: **264** feet	7. Exit Diameter: **7.33** feet
8. Exit Temperature: **126** °F	9. Actual Volumetric Flow Rate: **160,096** acfm	10. Water Vapor: **13.55** %
11. Maximum Dry Standard Flow Rate: **131,400** dscfm		12. Nonstack Emission Point Height: **NA** feet
13. Emission Point UTM Coordinates... Zone: **17** East (km): **454.7** North (km): **3392.2**		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

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D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **This segment is the HCE evaporated by this two module evapoarator train.**		
2. Source Classification Code (SCC): **30700302**	3. SCC Units: **lb/Air Dried Short Ton Unbleached Pulp**	
4. Maximum Hourly Rate: **41.6**	5. Maximum Annual Rate: **267,922**	6.Estimated Annual Activity Factor: **NA**
7. Maximum % Sulfur: **NA**	8. Maximum % Ash: **NA**	9. Million Btu per SCC Unit: **NA**
10. Segment Comment: **175,000 ADMT/yr x 1.1023 ST/MT x 1.3889 UB/B = 267,922 ADSTUP (air dry short ton unbleached pulp)**		

Segment Description and Rate: Segment __ of __

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

EMISSIONS UNIT INFORMATION
Section[1] of [1]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
VOC	**099**		**EL**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control: **estimated 95%**
3.Potential Emissions: **14.10** lb/hour **61.78** tons/year	4. Synthetically Limited? ☐ Yes [X] No
5. Range of Estimated Fugitive Emissions (as applicable): **NA** to tons/year	
6. Emission Factor: **0.4612 lb VOC/ADUBST** Reference: **Emission Test results**	7. Emissions Method Code: **1**

8. Calculation of Emissions:

baseline production = 231,967 ADUBST
baseline emissions = 53.49 Ton/yr
emission factor = 0.4612 lb VOC/ADUBST
53.49 x 2000 lb/ton x 1/231967 ADUBST = 0.4612 lb VOC/ADUBST

New production = 267,922 ADUBST

New emissions = 267922 ADUBST/yr x 0.4612 lb VOC/ADUBST x 1 ton/2000 lbs
= 61.78 TPY x 2000 lb/T x 1yr/87860 hr = 14.10 lb/hr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

This emission estimate is for the entire emission unit which includes all evaporators.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -

ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code:	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):	

Allowable Emissions Allowable Emissions __ of __

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

EMISSIONS UNIT INFORMATION
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G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation **1** of **1**

1. Visible Emissions Subtype: **NA**	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
Visible Emissions Comment: **This emission exhausts to atmosphere through the recovery boiler stack.**	

Visible Emissions Limitation: Visible Emissions Limitation ___ of __

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

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H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 1

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

Continuous Monitoring System: Continuous Monitor ___ of ___

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

EMISSIONS UNIT INFORMATION
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H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

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

Continuous Monitoring System: Continuous Monitor ___ of ___

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

Continuous Monitoring System: Continuous Monitor ___ of ___

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

EMISSIONS UNIT INFORMATION
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I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

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

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

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

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

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

6. Compliance Demonstration Reports/Records

☐ Attached, Document ID: _____

Test Date(s)/Pollutant(s) Tested: _____

_____

☐ Previously Submitted, Date: _____

Test Date(s)/Pollutant(s) Tested: _____

_____

☐ To be Submitted, Date (if known): _____

Test Date(s)/Pollutant(s) Tested: _____

_____

☒ Not Applicable

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

7. Other Information Required by Rule or Statute

☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))

☐ Attached, Document ID: _____ ☒ Not Applicable

2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)

☐ Attached, Document ID: _____ ☒ Not Applicable

3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)

☐ Attached, Document ID: _____ ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section[1] of [1]

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: _

2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _ ☒ Not Applicable

3. Alternative Methods of Operation
   ☐ Attached, Document ID: _ ☒ Not Applicable

4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _ ☒ Not Applicable

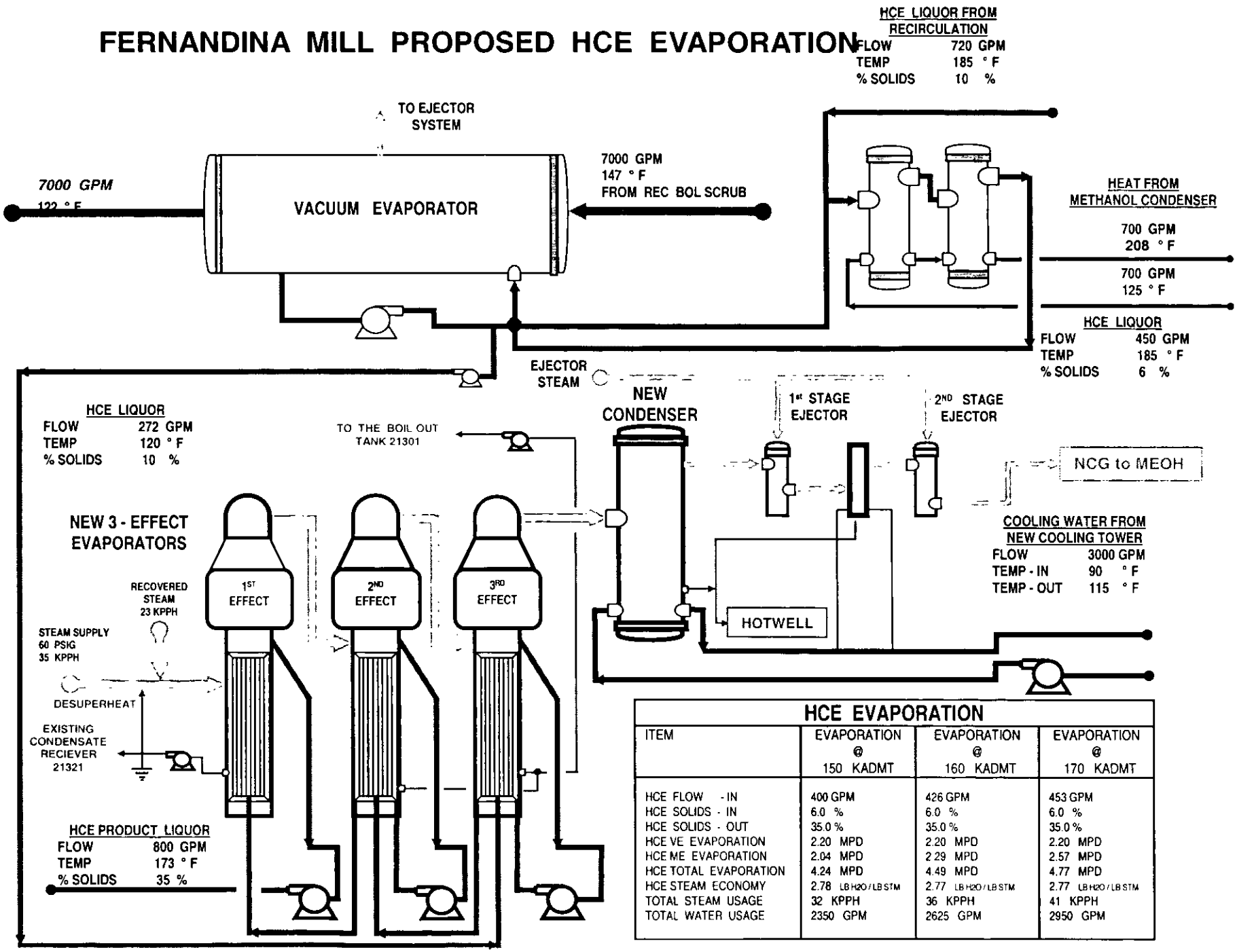
5. Acid Rain Part Application
   ☐ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID:
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID:_____
      ☐ Previously Submitted, Date:_____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)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

Additional Requirements Comment

Item 2 Fuel Analysis or Specification: is not applicable because this unit burns no fuel.
Item 3 Detailed Description of Control Equipment is given in Emission Unit Control Equipment section.

ATTACHMENT 1

FERNANDINA MILL PROPOSED HCE EVAPORATION



HCE EVAPORATION

ITEM	EVAPORATION @ 150 KADMT	EVAPORATION @ 160 KADMT	EVAPORATION @ 170 KADMT
HCE FLOW - IN	400 GPM	426 GPM	453 GPM
HCE SOLIDS - IN	6.0 %	6.0 %	6.0 %
HCE SOLIDS - OUT	35.0 %	35.0 %	35.0 %
HCE VE EVAPORATION	2.20 MPD	2.20 MPD	2.20 MPD
HCE ME EVAPORATION	2.04 MPD	2.29 MPD	2.57 MPD
HCE TOTAL EVAPORATION	4.24 MPD	4.49 MPD	4.77 MPD
HCE STEAM ECONOMY	2.78 LB H2O / LB STM	2.77 LB H2O / LB STM	2.77 LB H2O / LB STM
TOTAL STEAM USAGE	32 KPPH	36 KPPH	41 KPPH
TOTAL WATER USAGE	2350 GPM	2625 GPM	2950 GPM