original

Georgia-Pacific

Palatka Pulp and Paper Operations
Consumer Products Division

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Via FedEx

December 20, 2011

Mr. Jeffery F. Koerner, Air Permitting North Section
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Georgia-Pacific Consumer Operations LLC, Palatka Mill
No. 4 Recovery Boiler Floor Tube Replacement Project

Dear Mr. Koerner:

Georgia-Pacific Consumer Operations LLC (Georgia-Pacific) owns and operates an unbleached and bleached Kraft pulp and paper mill in Palatka, Putnam County, Florida (Palatka Mill). Georgia-Pacific is proposing to replace the floor tubes of the No. 4 Recovery Boiler. The work is being planned to coincide with the annual outage on the No. 4 Recovery Boiler in April 2012. Georgia-Pacific believes that this sort of routine maintenance/repair work qualifies for the routine maintenance, repair, and replacement (RMRR) exemption provisions within the federal and state-adopted Prevention of Significant Deterioration (PSD) permitting requirements. Guidance from the United States Environmental Protection Agency (U.S. EPA) regarding such maintenance projects has made it clear, however, that this is a case-by-case determination taking into account a number of relevant factors. An RMRR analysis has been included as Attachment A to this letter. Based on guidance from the Florida Department of Environmental Protection (Florida DEP), the remainder of this letter presents a state construction permit application to fully authorize the No. 4 Recovery Boiler floor tube replacement work.

PROJECT DESCRIPTION

The proposed project for the No. 4 Recovery Boiler involves replacement of the boiler floor tubes, which comprise 131 tubes and approximately 0.4% of the total heating surface area of the boiler. The corrosive environment of a recovery boiler smelt bed on the floor of the boiler causes tube thinning of the floor tubes. The significance of smelt/water reactions in a recovery boiler requires the tubes to be inspected annually and replaced as necessary. The project is preventive in nature to maintain and assure reliable and safe function of the boiler at its current capacity and does not serve to correct any current pattern of reduced reliability or lost production.

Although technically an identical replacement of tubes with no increase in black liquor solids (BLS) processing rate or steam generating capacity, improvements in the floor design and materials are planned based on the operating experience of this boiler and others in its class (e.g., floor will be constructed of corrosion-resistant one-piece tubing to eliminate welds on the horizontal floor and the floor will be sloped to improve circulation in order to minimize the risk of tube failure). Replacement of tubes in this area of a recovery boiler is considered a normal maintenance procedure which is expected to occur several times over the useful life of a recovery boiler. This work is currently scheduled to occur during the annual No. 4 Recovery Boiler outage in April 2012.

PSD APPLICABILITY ANALYSIS

Because the RMRR exemption is applied on a case-by-case basis, the Palatka Mill has also completed a PSD applicability analysis for this project by performing a comparison of "baseline actual emissions" to "projected actual emissions" as prescribed under Florida DEP's PSD rules.[1] As mentioned previously in this letter, the tube replacement project is not meant or expected to affect the design capacity or BLS processing rate of the No. 4 Recovery Boiler.

Emission Increase Calculations

For determining applicability of PSD permitting for the tube replacement project, the Palatka Mill used the "baseline actual-to-projected-actual" applicability test for projects that only involve existing emission units as specified under Chapter 62-212.400(2)(a)1. of Florida DEP's Air Resource Management Rules. As described in these rules, a significant emissions increase of a regulated PSD pollutant is projected to occur if the sum of the difference(s) between the "projected actual" emissions and the "baseline actual" emissions equals or exceeds the significant emission rate for that pollutant. In developing the projected actual emissions, Florida DEP's Stationary Source – General Requirements Rule [62-210.200(244)] specifies that the projected actual emission rate "shall exclude that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish

[1] Florida Rule 62-212.400, Prevention of Significant Deterioration, allows for the baseline actual-to-projected actual emission test under Section (2)(a)1.

the baseline actual emissions and that is also unrelated to the particular project, including any increased utilization due to product demand growth."

The Palatka Mill is also addressing the greenhouse gas (GHG) emission changes associated with the project in accordance with the U.S. EPA's Tailoring Rule, including the recent deferral of inclusion of biogenic carbon dioxide (CO_2) in PSD permitting analyses. Because U.S. EPA is the GHG permitting authority in the state of Florida, all final rules amending the Tailoring Rule are immediately effective in Florida. Step 2 of the Tailoring Rule, which began on July 1, 2011, requires that GHG emissions associated with each project be evaluated for PSD applicability regardless of the level of increase for the other PSD-regulated pollutants. GHG emission increases are not subject to regulation unless there is both an increase in emissions of total carbon dioxide equivalents (CO_2e) of at least 75,000 tons CO_2e and there is an increase in total mass-based GHG emissions greater than zero. As demonstrated in the following sections of this letter, the proposed project does not trigger PSD permitting for any of the PSD-regulated pollutants, including GHGs.

Emission Factors

Florida Rule 62-210.370 establishes the required methods sources should use to calculate actual emissions, including baseline actual emissions. Under this rule, if a unit is equipped with a valid continuous emissions monitoring system (CEMS), it should be used to compute emissions. If a CEMS is not used, facilities should first seek to use mass balance data if available, followed by site-specific emission factors if certain requirements are met.

The Palatka Mill has operated certified sulfur dioxide (SO_2) and total reduced sulfur (TRS) CEMS on the No. 4 Recovery Boiler since 2008 and nitrogen oxides (NO_X) and carbon monoxide (CO) CEMS since 2009. Therefore, CEMS data is used to determine baseline actual emissions for 2008–2011 for SO_2 and TRS and 2009–2011 for NO_X and CO.

Prior to installation of CEMS, the Palatka Mill performed annual stack tests for these pollutants. In addition, annual stack tests are conducted for filterable particulate matter (PM) and volatile organic compounds (VOC). According to Florida Rule 62-210.370, when using stack test data to determine appropriate emission factors, all valid stack tests performed over at least a five-year period encompassing the period for which emissions are being calculated should be averaged. In general, in developing stack-test based emission factors, the five-year period immediately surrounding the year for which emissions are being calculated is selected such that the emission factor for 2005 would be determined by averaging the stack test data for 2003–2007, for example. The five-year period was altered as needed to ensure at least five valid stack tests were averaged for each pollutant when available. In no instance was stack test data averaged with CEMS data to determine a baseline emission factor. The development of stack test-based and CEMS emission factors is shown in Table B-1 of Attachment B to this letter.

For other non-GHG PSD pollutants without site-specific data, including condensable PM, sulfuric acid mist (SAM), lead, and hydrogen sulfide (H_2S), emission factors were chosen from the National Council for Air and Stream Improvement's (NCASI) collection of emission factors for the pulp and paper industry for black liquor solids (BLS) combustion and U.S. EPA's AP-42 collection of emission factors for No. 6 fuel oil combustion. In addition, the size distribution of filterable PM available from NCASI was used to determine emissions of particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}) and particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$). For GHGs, emission factors were selected from U.S. EPA's Mandatory Reporting Rule for GHGs.[2]

Baseline Actual Emissions

"Baseline actual emissions" (BAE) are defined by Florida Rule 62-210.200(36) as "the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding the date a complete permit application is received by the Department...". For this project, data from January 2002 through June 2011 were reviewed and five distinct baseline periods were used for the collection of PSD pollutants, as follows:

- February 2002 – January 2004 for PM, PM_{10}, and $PM_{2.5}$
- May 2002 – April 2004 for NO_X, VOC, TRS, SAM, lead, and H_2S
- July 2005 – June 2007 for CO
- June 2008 – May 2010 for GHGs
- June 2009 – May 2011 for SO_2

Florida Rule 62-210.200(36)(b)4. allows for the use of different consecutive 24-month periods for each regulated NSR pollutant.

Baseline actual emissions in tons per year (tpy) are summarized in Table 1 below. Detailed calculations are provided in Tables B-2 through B-6 in Attachment B to this letter.

[2] 40 CFR Part 98.

TABLE 1. BASELINE ACTUAL EMISSIONS (BAE)

Pollutant	Baseline Actual Emission Rate (tpy)
SO_2	73.82
NO_X	453.23
CO	1,124.66
PM	119.64
PM_{10}	92.43
$PM_{2.5}$	72.05
VOC	17.67
TRS	8.88
SAM	4.43
Lead	4.1E-03
H_2S	6.57
GHG	36,974
CO_2e	55,930

Projected Actual Emissions

"Projected actual emissions" (PAE) are defined by Florida Rule 62-210.200(244), as "the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a PSD pollutant in any one of the 5 years following the date the unit resumes regular operation after the project."[3] To determine this maximum annual rate, the Palatka Mill evaluated both historical operating data as well as the company's highest projections of expected business activity for the five-year period after implementation of the project. The projected actual BLS processing rate for this project was determined to be 836,000 tons BLS/yr, which is based on the expected paper production rate of the mill.

Projected actual emissions in tons per year (tpy) are summarized in Table 2 below. Detailed calculations are provided in Tables B-7 and B-8 in Attachment B to this letter.

[3] This definition applies to sources that do not modify the unit's existing design capacity.

TABLE 2. PROJECTED ACTUAL EMISSIONS (PAE)

Pollutant	Projected Actual Emission Rate (tpy)
SO_2	91.59
NO_X	512.89
CO	1,292.87
PM	135.85
PM_{10}	104.50
$PM_{2.5}$	81.09
VOC	30.93
TRS	9.61
SAM	4.97
Lead	4.6E-03
H_2S	7.37
GHG	44,043
CO_2e	66,811

Could Have Accommodated Emissions

As instructed in the definition of "projected actual emissions" given in Florida Rule 62-210.200(244), projected actual emissions in Table 2 do not include "that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth." U.S EPA has indicated that the quantity of emissions that can be excluded may be based on "the highest demonstrated average monthly operating level during the baseline period as an approximation of the level of operation that the units 'could have accommodated' during the baseline period and 'that are also unrelated to the project'."[4] This maximum monthly method was used to determine emissions that the No. 4 Recovery Boiler could have accommodated (CHA) during the baseline period.

To determine the BLS throughput rate to be used in calculating CHA emissions, each monthly BLS throughput rate was annualized for each month in the baseline period by dividing by the number of calendar days in the month and multiplying by 365 days/year and the average annual uptime of the No. 4 Recovery Boiler from 2002 to 2010, which was 94.5% of total time in the year. As the CHA emission rate is a subset of the projected actual emission rate and is to be excluded from the projected actual emission rate, the CHA production and emission rates can be no greater than the projected actual production and emission rates. Therefore, any annualized monthly BLS throughput that

[4] Letter from Mr. Gregg Worley (EPA Region 4) to Mr. Mark Robinson (GP Wood Products South LLC – Columbia Sawmill) dated March 17, 2010.

was greater than the projected actual BLS throughput rate of 836,000 ton BLS/yr, was reduced to the projected actual BLS throughput rate.

The definition of "projected actual emissions" also stipulates that the CHA emissions can not include any emissions that are related to the proposed change. As the proposed boiler floor tube replacements will not affect the BLS firing rate or fossil fuel firing rates of the No. 4 Recovery Boiler, all CHA emissions are unrelated to the change and can be excluded from the projected actual emissions. The CHA emissions in tons per year (tpy) are summarized in Table 3 below. Detailed emission calculations are provided in Tables B-9 and B-10 in Attachment B to this letter.

TABLE 3. COULD HAVE ACCOMMODATED (CHA) EMISSIONS

Pollutant	Could Have Accommodated Emission Rate (tpy)
SO_2	83.96
NO_X	486.78
CO	1,217.76
PM	128.62
PM_{10}	99.37
$PM_{2.5}$	77.46
VOC	18.97
TRS	9.38
SAM	4.73
Lead	4.4E-03
H_2S	7.02
GHG	ND
CO_2e	ND

ND = Not Determined

The amount of emissions that are excluded from projected actual emissions because they could have been accommodated during the baseline period and are unrelated to the change are defined as the difference between CHA emissions and BAE emissions. The determination of "excludable emission" is shown in Table 4 below.

TABLE 4. EXCLUDABLE EMISSIONS

Pollutant	Could Have Accommodated Emission Rate (tpy)		Baseline Actual Emission Rate (tpy)		Excludable Emissions (tpy)
SO_2	83.96	—	73.82	=	10.14
NO_X	486.78	—	453.23	=	33.55
CO	1,217.76	—	1,124.66	=	93.10
PM	128.62	—	119.64	=	8.99
PM_{10}	99.37	—	92.43	=	6.94
$PM_{2.5}$	77.46	—	72.05	=	5.41
VOC	18.97	—	17.67	=	1.31
TRS	9.38	—	8.74	=	0.65
SAM	4.73	—	4.43	=	0.30
Lead	4.4E-03	—	4.1E-03	=	2.8E-04
H_2S	7.02	—	6.57	=	0.45

Project Emissions Analysis Summary

To determine the project emission increases, the baseline actual emissions and excludable emissions are subtracted from the projected actual emissions. As shown in Table 5, the emission increase analysis demonstrates that there will be no significant emissions increase of any of the NSR pollutants as a result of the No. 4 Recovery Boiler floor tube replacement project.

TABLE 5. PSD APPLICABILITY ANALYSIS

Quantity	SO_2 (tpy)	NO_X (tpy)	CO (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	VOC (tpy)	TRS (tpy)	SAM (tpy)	Lead (tpy)	H_2S (tpy)	GHG (tpy)	CO_2e (tpy)
Baseline Actual Emissions (BAE)	73.8	453.2	1,124.7	119.6	92.4	72.1	17.7	8.7	4.4	4.1E-03	6.6	36,974	55,930
Projected Actual Emissions (PAE)	91.6	512.9	1,292.9	135.9	104.5	81.1	30.9	9.6	5.0	4.6E-03	7.4	44,043	66,811
Could Have Accomodated (CHA) Emissions [a]	84.0	486.8	1,217.8	128.6	99.4	77.5	19.0	9.4	4.7	4.4E-03	7.0	ND	ND
Excludable Emissions (EE) [b]	10.1	33.6	93.1	9.0	6.9	5.4	1.3	0.6	0.3	2.8E-04	0.5	ND	ND
Emissions Increase (PAE - BAE - EE)	7.6	26.1	75.1	7.2	5.1	3.6	12.0	0.2	0.2	2.2E-04	0.4	7,070	10,882
PSD Significant Emission Rate (SER)	40	40	100	25	15	10	40	10	7	0.6	10	0	75,000
PSD Triggered? [c]	No	No	No	No	No	No	No	No	No	No	No	No	

a. The emission rate of each pollutant that the No. 4 Recovery Boiler "could have accommodated" during the baseline period is calculated from the annualized value of the highest monthly black liquor solids throughput rate during the baseline period and the effective baseline emission factor. In no instance is the could have accommodated emission rate greater than the projected actual emission rate.

b. The quantity of emissions that are unrelated to the project and are excluded from the emission increase calculation for each pollutant is equal to the could have accommodated emission rate minus the baseline actual emission rate. Could have accommodated emissions and, therefore, excludable emissions are not determined for GHGs.

c. The emissions increase for both GHG and CO_2e must exceed their respective thresholds for PSD to be triggered.

NSPS APPLICABILITY ANALYSIS

The No. 4 Recovery Boiler was constructed prior to the applicability date of all potentially applicable New Source Performance Standards (NSPS) and has not been modified or reconstructed as defined in the NSPS rules since the unit was originally constructed. Potentially applicable NSPS include Subpart BB for Kraft Pulp Mills, Subpart D for Fossil Fuel Steam Generators, and Subpart Db for Industrial, Commercial, and Institutional Steam Generating Units. The floor tube replacement project will not result in a "modification" as defined under NSPS, as there will be no increase in the maximum hourly emission rate of any of the pollutants regulated under the potentially applicable NSPS noted above.

The NSPS rules can also be triggered if the boiler was being "reconstructed". Reconstruction occurs under the NSPS rules when the fixed capital cost of the new components for a project exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new unit. Since the estimated $3.45 million dollar cost for the proposed project for the No. 4 Recovery Boiler is approximately 3.5 percent of the cost for an entirely new recovery furnace, estimated to be $100 million for a similarly sized furnace, the project does not constitute reconstruction.

Therefore, the No. 4 Recovery Boiler will not become subject to any NSPS as a result of the proposed project.

NESHAP APPLICABILITY ANALYSIS

The No. 4 Recovery Boiler is an applicable source under National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart MM for Chemical Recovery Combustion Sources located at Kraft, Soda, Sulfite, or Stand-Alone Semichemical Pulp Mills. The various applicable requirements of NESHAP Subpart MM have been incorporated into the Palatka Mill's Title V permit. The proposed project will not alter the applicable provisions of Subpart MM and the Mill will continue to comply with all such regulations after completion of the floor tube replacement project.

FLORIDA STATE REGULATORY ANALYSIS

The No. 4 Recovery Boiler is subject to and complies with various general or regulation/sector specific state requirements including:

- Chapter 62-212.400 – Prevention of Significant Deterioration (PSD)
- Chapter 62-296.404 – Kraft (Sulfate) Pulp Mills and Tall Oil Plants
- Chapter 62-297.310 – General Compliance Test Requirements
- Chapter 62-297.401 – Compliance Test Methods

The proposed project will not alter the applicability of any state regulation and the Mill will continue to comply with all such applicable regulations after completion of the floor tube replacement project.

Florida Rule 62-210.300(1)(a) requires that owners/operators of a source obtain an air construction permit prior to beginning construction of any proposed new, reconstructed, or modified facility or emissions unit unless the proposed project is exempt from construction permitting pursuant to Florida Rule 62-210.300(3)(a) or (b) or Rule 62-4.040. Since the exemptions in Florida Rules 62-210.300(3)(a), 62-210.300(3)(b), and 62-4.040 do not apply to the proposed No. 4 Recovery Boiler floor tube replacement project, the Palatka Mill is submitting this letter seeking authorization to begin the project with Florida DEP's issuance of a state construction permit. A completed Application for Air Permit – Long Form is provided in Attachment C to this letter providing the additional information Florida DEP requires of state air construction permit applicants.

GP plans to complete this work during the April 2012 annual outage for the No. 4 Recovery Boiler. With this letter, we are presenting an RMRR analysis that concludes the floor tube replacement should be considered RMRR and exempted from being classified as a modification under federal and state PSD permitting regulations (see Attachment A). In addition, we are submitting a state construction permit application seeking authorization from Florida DEP to proceed with the proposed projected under state rules and regulations. Please feel free to contact Mr. Ron Reynolds at (386) 329-0967 should you have any questions or require further information.

Sincerely,

Gary Frost
Vice President and Mill Manager
Georgia-Pacific Palatka LLC

cc: Kenneth Prest, Georgia-Pacific Palatka LLC (Palatka, FL)
Ron Reynolds, Georgia-Pacific Palatka LLC (Palatka, FL)
Mark Ruppel, Georgia-Pacific Consumer Products LP (North Little Rock, AR)

Attachments

ATTACHMENT A

RMRR ANALYSIS

The relevant criteria for determining whether a given project constitutes RMRR are set out in EPA's 1988 WEPCO memorandum and in U.S. EPA's 1992 "WEPCO Rule", as guided by numerous subsequent applicability determinations and court decisions. Of particular significance is U.S EPA's statement, in the preamble to the WEPCO rule, that the determination of whether the activity in question is routine "must be based on an evaluation of whether that type of equipment has been repaired or replaced by sources within the relevant industrial category." GP has evaluated the proposed No. 4 Recovery Boiler project in light of this guidance.

The 1988 WEPCO determination articulates five factors for assessing the "routineness" of a maintenance, repair, or replacement activity: nature, extent, purpose, frequency, and cost. U.S. EPA points out that none of the factors alone determines the routineness of a project, but that the five factors should be used to arrive at a conclusion based upon the circumstances of the project as a whole. The following discussion addresses these factors in that manner:

Nature: The proposed project for the No. 4 Recovery Boiler involves replacement of the boiler floor tubes. The corrosive environment of a recovery boiler smelt bed on the floor of the boiler causes tube thinning of the floor tubes. The danger of smelt/water explosions in a recovery boiler requires the tubes to be inspected annually and replaced as necessary.

The No. 4 Recovery Boiler has a heating surface area totaling 300,219 square feet. Of this total the boiler floor tubes comprise 1,329 square feet, or approximately 0.4% of the total. All 131 floor tubes will be replaced. Although technically an identical replacement of tubes with no increase in black liquor solids (BLS) processing rate or steam generating capacity, improvements in the floor design and materials are planned based on the operating experience of this boiler and others in its class (e.g., floor will be constructed of corrosion-resistant one-piece tubing to eliminate welds on the horizontal floor and the floor will be sloped to improve circulation in order to minimize the risk of tube failure). Replacement of tubes in this area of a recovery boiler is considered a normal maintenance procedure which is expected to occur several times over the useful life of a recovery boiler. This work is currently scheduled to occur during the annual No. 4 Recovery Boiler outage in April 2012.

Extent: Only the floor tubes are being replaced. This constitutes less than 1% of the total heating surface area of the boiler. The boiler drum, liquor firing system, air systems, ash and emission control systems, combustion/steam control systems, boiler feedwater treatment and handling systems, etc. will remain unchanged. Additional routine maintenance items normally conducted on an annual basis will also be handled during this outage in order to avoid unnecessary and costly additional outages. The projected duration of the outage for the No. 4 Recovery Boiler is approximately 23 days. This is consistent with the normal duration of such an outage. The facility will otherwise remain fully operational. No addition of parts to the boiler is anticipated beyond the previously described partial boiler tube replacement.

Purpose: The tubes are being replaced for safety reasons to maintain and assure reliable and safe function of the boiler at its current capacity. The project is preventive in nature and does not serve to correct any current pattern of reduced reliability or lost production. Recovery boiler tubes are evaluated annually due to the risk of tube leaks and smelt/water explosions. Based on the annual inspection results, tubes are scheduled for replacement before the minimum safe thickness is reached. As stated above, the corrosive environment of the smelt bed on the boiler floor causes thinning of the floor tubes.

Tubes are considered replaceable components of a boiler. It is anticipated that additional tube replacements will be made over the course of the unit's life and, as such, this does not serve as a life extension. The normal lifespan of this type of boiler will be dictated by the condition of major components, such as the steam drum and other major structural elements. Assuming continued viability of the Palatka Mill, it is anticipated that this boiler will be replaced at the end of its useful life. The tubes are a direct replacement and do not serve to increase capacity, operating rate, or utilization. As noted above, no changes to BLS firing capabilities and related equipment are involved in this project.

Frequency: Construction of the No. 4 Recovery Boiler commenced in September 1974 and was completed in December 1976. Tube thickness measurements and inspections take place annually and the tubes are replaced as needed. Insurance requirements and safety (with the danger of smelt/water explosions in a recovery boiler) and reliability concerns require that tubes be inspected and periodically replaced. While the extent, type, and location may vary, some amount of boiler tube replacement is typically completed during each annual outage. Following is a summary of the tube repair/replacement history of the boiler dating back to the year 2000:

- 2000 – Replaced rear 2 tubes of 4 front superheater elements
- 2001 – Replaced rear 2 tubes of 7 front superheater elements and sections of 4 wall tubes
- 2002 – Replaced sections of 34 front, left, and rear wall tubes
- 2003 – Replaced sections of 8 screen elements and 7 superheater loops
- 2004 – Replaced all roof tubes, sections of 25 wall tubes, and several superheater loops
- 2005 – Replaced sections of 260 wall tubes and 46 superheater lower loops
- 2006 – Replaced sections of 32 wall tubes and several front superheater loops
- 2007 – Replaced all superheater and economizer tubes, sections of 44 left wall tubes, and 11 screen tubes
- 2008 – Replaced sections of 52 front wall tubes and sections of 3 floor tubes
- 2010 – Replaced sections of 128 sidewall tubes and repaired several floor tubes
- 2011 – Repaired a dent in a floor tube and a bent tube at IK-4

The tube replacement work completed in 2007, 2008, and 2010 was originally described in the comprehensive 2006 PSD permit application that contained several modifications to various emission units at the Mill from which Permit PSD-FL-380 was issued in May 2007.

Cost: The estimated cost of the floor tube replacement project is $3.45 million and is being funded as a capital expense. This cost is approximately 3.5% of the estimated $100 million cost of a comparable new recovery boiler. The Palatka Mill's annual boiler maintenance cost experience has been somewhat variable based on specific year-to-year needs, but has averaged approximately $14.9 million per year between 2005 and 2010 for all Mill boilers. Therefore, the estimated cost of this floor tube replacement work fits well within the Mill's average annual boiler maintenance spending.

The Mill believes that a reasonable evaluation of the information supplied above leads to the conclusion that the proposed maintenance, repair, and replacement activity is "routine" for recovery boiler tubes of this type throughout the industry and at the Palatka Mill.

ATTACHMENT B
EMISSION CALCULATIONS

Table B-1. No. 4 Recovery Boiler Stack Test and Continuous Emission Monitoring System (CEMS) Data

Stack Test Data				Baseline Actual Emission Factor Development		
Test Date	BLS Processing Rate (tph)	Emission Rate (lb/hr)	Emission Factor (lb/ton BLS)	Reporting Year	Averaging Period	Emission Factor [a] (lb/ton BLS)
			Sulfur Dioxide (SO_2) [b]			
07/01/02	97.9	67.5	0.689	2002	2003, 2004, 2006, 2007	0.055
01/17/03	97.9	1.5	0.015	2003	2003, 2004, 2006, 2007	0.055
03/02/04	97.7	4.3	0.044	2004	2003, 2004, 2006, 2007	0.055
09/06/05	93.8	BDL	-	2005	2003, 2004, 2006, 2007	0.055
07/24/06	96.5	14.6	0.151	2006	2003, 2004, 2006, 2007	0.055
09/12/07	96.2	1	0.010	2007	2003, 2004, 2006, 2007	0.055
2008	-	CEMS	0.097	2008	2008 CEMS Data	0.097
2009	-	CEMS	0.187	2009	2009 CEMS Data	0.187
2010	-	CEMS	0.033	2010	2010 CEMS Data	0.033
2011	-	CEMS	0.106	2011	2011 CEMS Data	0.106
	Average (2003 - 2011) =		**0.081**			
	Median (2003 - 2011) =		**0.070**			
	St Dev (2003 - 2011) =		**0.066**			
	Median + 1*St Dev (2003 - 2011) =		**0.136**			
			Nitrogen Oxides (NO_x) [c]			
07/11/01	93.8	105.1	1.120	-	-	-
07/01/02	97.9	130.1	1.329	2002	2001-2005	1.164
01/17/03	97.9	93.3	0.953	2003	2001-2005	1.164
03/02/04	97.7	115	1.177	2004	2002-2006	1.131
09/06/05	93.8	116.3	1.240	2006	2003-2007	1.118
07/24/06	96.5	92.4	0.958	2006	2004-2008	1.118
09/12/07	96.2	121.3	1.261	2007	2004-2008	1.118
2008	101.6	97	0.955	2008	2004-2008	1.118
2009	-	CEMS	1.096	2009	2009 CEMS Data	1.096
2010	-	CEMS	1.090	2010	2010 CEMS Data	1.090
2011	-	CEMS	1.031	2011	2011 CEMS Data	1.031
	Average (2001 - 2011) =		**1.110**	**1.072**		
	Median (2001 - 2011) =		**1.096**	**1.090**		
	St Dev (2001 - 2011) =		**0.131**	**0.036**		
	Median + 1*St Dev (2001 - 2011) =		**1.227**	**1.126**		
			Carbon Monoxide (CO) [c]			
07/01/02	97.9	166.6	1.702	2002	2001-2005	2.363
01/17/03	97.9	226	2.308	2003	2001-2005	2.363
03/02/04	97.7	318	3.255	2004	2002-2006	2.363
09/06/05	93.8	293	3.124	2004	2003-2007	2.937
07/24/06	96.5	137.4	1.424	2006	2004-2008	2.873
09/12/07	96.2	440	4.574	2007	2004-2008	2.873
2008	101.6	202	1.988	2008	2004-2008	2.873
2009	-	CEMS	1.961	2009	2009 CEMS Data	1.961
2010	-	CEMS	2.003	2010	2010 CEMS Data	2.003
2011	-	CEMS	2.333	2011	2011 CEMS Data	2.333
	Average (2002 - 2011) =		**2.467**			
	Median (2002 - 2011) =		**2.155**			
	St Dev (2002 - 2011) =		**0.937**			
	Median + 1*St Dev (2002 - 2011) =		**3.093**			
			Particulate Matter (PM) (Filterable Only) [c]			
07/11/01	93.8	37.8	0.4030	-	-	-
07/01/02	97.9	19.3	0.1971	2002	2001-2005	0.245
01/17/03	97.9	15.4	0.1573	2003	2001-2005	0.245
08/26/04	96.5	31.2	0.3235	2004	2002-2006	0.222
09/06/05	93.8	13.6	0.1450	2004	2003-2007	0.204
07/24/06	96.5	27.6	0.2860	2006	2004-2008	0.197
09/12/07	96.2	10.6	0.1102	2007	2005-2009	0.157
2008	101.6	12.4	0.1220	2008	2006-2010	0.182
03/18/09	101.0	12.3	0.1218	2009	2007-2011	0.142
03/24/10	100.0	27.0	0.2700	2010	2007-2011	0.142
04/26/11	98.7	8.3	0.0841	2011	2007-2011	0.142
	Average (2001 - 2011) =		**0.202**			
	Median (2001 - 2011) =		**0.157**			
	St Dev (2001 - 2011) =		**0.104**			
	Median + 1*St Dev (2001 - 2011) =		**0.261**			

Table B-1. No. 4 Recovery Boiler Stack Test and Continuous Emission Monitoring System (CEMS) Data

Stack Test Data				Baseline Actual Emission Factor Development		
Test Date	BLS Processing Rate (tph)	Emission Rate (lb/hr)	Emission Factor (lb/ton BLS)	Reporting Year	Averaging Period	Emission Factor [a] (lb/ton BLS)
			Volatile Organic Compounds (VOC) [c]			
07/11/01	93.8	6.1	0.0650	-	-	-
07/01/02	97.9	8.2	0.0832	2002	2001-2005	0.047
01/17/03	97.9	3.7	0.0378	2003	2001-2005	0.047
03/02/04	97.7	0.3	0.0031	2004	2002-2006	0.036
09/06/05	93.8	4.3	0.0458	2004	2003-2007	0.026
07/24/06	96.5	1.0	0.0104	2006	2004-2008	0.034
09/12/07	96.2	3.0	0.0312	2007	2005-2009	0.040
2008	101.6	8.0	0.0787	2008	2006-2010	0.045
03/18/09	101.0	3.5	0.0347	2009	2007-2011	0.058
03/24/10	100.0	7.1	0.0710	2010	2007-2011	0.058
04/26/11	98.7	7.3	0.0740	2011	2007-2011	0.058
		Average (2001 - 2011) =	**0.049**			
		Median (2001 - 2011) =	**0.046**			
		St Dev (2001 - 2011) =	**0.028**			
		Median + 1*St Dev (2001 - 2011) =	**0.074**			
			Total Reduced Sulfur (TRS) [c]			
07/11/01	93.8	2.9	0.0309	-	-	-
07/01/02	97.9	1.9	0.0194	2002	2001-2005	0.023
01/17/03	97.9	0.6	0.0065	2003	2001-2005	0.023
03/02/04	97.7	2.2	0.0225	2004	2002-2006	0.019
09/06/05	93.8	3.3	0.0352	2004	2003-2007	0.017
07/24/06	96.5	1.1	0.0114	2006	2003-2007	0.017
09/12/07	96.2	1.0	0.0104	2007	2003-2007	0.017
2008	-	CEMS	0.015	2008	2008 CEMS Data	0.015
2009	-	CEMS	0.013	2009	2009 CEMS Data	0.013
2010	-	CEMS	0.011	2010	2010 CEMS Data	0.011
2011	-	CEMS	0.014	2011	2011 CEMS Data	0.014
		Average (2001 - 2011) =	**0.017**			
		Median (2001 - 2011) =	**0.014**			
		St Dev (2001 - 2011) =	**0.009**			
		Median + 1*St Dev (2001 - 2011) =	**0.023**			

a. As required by Florida Rule 62-210.370, when stack test data are used to determine baseline actual emissions, an average value including at least five years of test results is determined. For each pollutant, engineering judgment is used to determine the appropriate number of years to include in the averaging of stack test data. When CEMS are used to determine baseline actual emissions, no averaging is required and none is performed for this analysis.

b. For SO_2, the stack test-based emission factors for 2002 and prior are not used to determine the appropriate baseline actual emission factors as they are much higher than other data points and pre-date current emission limits. In addition, the stack test result from 2005 was below the detection limit. Therefore, the baseline actual emission factors for 2002-2007 are calculated as the average of all stack test-based emission factors because only four data points are available. CEMS data is used to calculate baseline actual emission factors for 2008, 2009, 2010, and 2011.

c. When available, the baseline actual emission factor for a given year is calculated as the average of the five years immediately surrounding the current year (i.e., average of the two years prior to the current year, the current year, and the two year after the current year). If data are not available for all years, engineering judgment is used to determine the appropriate five years to average to determine the baseline emission factor. In no instance is CEMS data averaged with stack test data to determine the baseline average emission factors.

Table B-2. No. 4 Recovery Boiler Baseline Actual Emission Calculations for Pollutants with Variable Stack Test and CEMS Emission Factors

		BLS Throughput				SO_2			NO_x			CO			PM (Filterable Only)			VOC [c]			TRS [c]		
Month	Days	Monthly Total (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	No. 6 Fuel Oil (bbl/mo)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [a] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [a] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)
Jan-02	31	67,900			8,256	1.87			39.52			80.22			8.32			1.60			0.78		
Feb-02	28	61,600			643	1.69			35.85			72.78			7.55			1.45			0.71		
Mar-02	31	60,900			2,126	1.67			35.44			71.95			7.46			1.43			0.70		
Apr-02	30	48,240			3,214	1.33			28.08			57.00			5.91			1.13			0.55		
May-02	31	61,040			1,779	1.68			35.53			72.12			7.48			1.43			0.70		
Jun-02	30	64,260			471	1.77			37.40			75.92			7.87			1.51			0.74		
Jul-02	31	78,400			578	2.16			45.63			92.63			9.60			1.84			0.90		
Aug-02	31	63,980			761	1.76			37.24			75.59			7.84			1.50			0.74		
Sep-02	30	63,140	770,535		1,449	1.74			36.75			74.60			7.73			1.48			0.73		
Oct-02	31	78,400	770,360		2,021	2.16			45.63			92.63			9.60			1.84			0.90		
Nov-02	30	53,820	761,460		1,273	1.48			31.32			63.59			6.59			1.26			0.62		
Dec-02	31	65,380	767,060		0	1.80	21.11		38.05	446.44		77.25	906.28		8.01	93.96		1.54	18.01		0.75	8.82	
Jan-03	31	81,025	780,185		233	2.23	21.47		47.16	454.08		95.73	921.79		9.93	95.57		1.90	18.31		0.93	8.97	
Feb-03	28	65,100	783,685		310	1.79	21.57		37.89	456.12		76.92	925.93		7.97	95.99		1.53	18.39		0.75	9.01	
Mar-03	31	64,260	787,045		436	1.77	21.67		37.40	458.08		75.92	929.90		7.87	96.40		1.51	18.47		0.74	9.05	
Apr-03	30	77,875	816,680		439	2.14	22.48		45.32	475.32		92.01	964.91		9.54	100.03		1.83	19.17		0.90	9.40	
May-03	31	23,460	779,100		1,500	0.65	21.45		13.65	453.44		27.72	920.51		2.87	95.42		0.55	18.29		0.27	8.97	
Jun-03	30	54,040	768,880		1,476	1.49	21.17		31.45	447.49		63.85	908.44		6.62	94.17		1.27	18.05		0.62	8.85	
Jul-03	31	79,975	770,455		0	2.20	21.21		46.55	448.41		94.49	910.30		9.80	94.37		1.88	18.09		0.92	8.87	
Aug-03	31	62,160	768,635		1,086	1.71	21.16		36.18	447.35		73.44	908.15		7.61	94.14		1.46	18.05		0.71	8.84	
Sep-03	30	64,260	769,755	770,145	118	1.77	21.19		37.40	448.00		75.92	909.47		7.87	94.28		1.51	18.08		0.74	8.85	
Oct-03	31	78,400	769,755	770,058	121	2.16	21.19		45.63	448.00		92.63	909.47		9.60	94.28		1.84	18.08		0.90	8.85	
Nov-03	30	58,660	774,595	768,028	714	1.61	21.32		34.14	450.82		69.31	915.19		7.19	94.88		1.38	18.20		0.67	8.90	
Dec-03	31	67,900	777,115	772,088	691	1.87	21.39	21.25	39.52	452.29	449.37	80.22	918.16	912.22	8.32	95.19	94.58	1.60	18.26	18.14	0.78	8.93	8.88
Jan-04	31	78,925	775,015	777,600	707	2.17	21.33	21.40	44.63	449.76	451.92	93.25	915.68	918.74	8.76	94.02	94.80	1.42	17.78	18.05	0.75	8.75	8.86
Feb-04	29	62,300	772,215	777,950	308	1.71	21.25	21.41	35.23	447.10	451.61	73.61	912.37	919.15	6.92	92.97	94.48	1.12	17.37	17.88	0.59	8.59	8.80
Mar-04	31	63,210	771,165	779,105	212	1.74	21.22	21.45	35.75	445.45	451.77	74.68	911.13	920.52	7.02	92.12	94.26	1.14	17.00	17.74	0.60	8.45	8.75
Apr-04	30	54,840	748,130	782,405	674	1.51	20.59	21.54	31.01	431.14	453.23	64.79	883.91	924.41	6.09	88.67	94.35	0.99	16.16	17.67	0.52	8.07	8.74
May-04	31	33,930	758,600	768,850	5,294	0.93	20.87	21.16	19.19	436.68	445.06	40.09	896.28	908.40	3.77	89.57	92.50	0.61	16.22	17.26	0.32	8.12	8.55
Jun-04	30	62,020	766,580	767,730	1,323	1.71	21.09	21.13	35.07	440.30	443.90	73.28	905.71	907.08	6.88	89.83	92.00	1.12	16.07	17.06	0.59	8.09	8.47
Jul-04	31	73,850	760,455	765,455	1,331	2.03	20.92	21.07	41.76	435.51	441.96	87.25	898.47	904.39	8.20	88.23	91.30	1.33	15.52	16.81	0.70	7.87	8.37
Aug-04	31	64,400	762,695	765,665	101	1.77	20.98	21.07	36.42	435.75	441.55	76.09	901.12	904.64	7.15	87.77	90.96	1.16	15.22	16.64	0.61	7.77	8.31
Sep-04	30	54,750	753,185	761,470	2,600	1.51	20.72	20.96	30.96	429.31	438.66	64.69	889.89	899.68	6.08	85.98	90.13	0.99	14.70	16.39	0.52	7.55	8.20
Oct-04	31	80,325	755,110	762,433	476	2.21	20.77	20.98	45.42	429.10	438.55	94.90	892.16	900.82	8.92	85.30	89.79	1.45	14.31	16.20	0.76	7.41	8.13
Nov-04	30	61,880	758,330	766,463	1,098	1.70	20.86	21.09	34.99	429.95	440.39	73.11	895.96	905.58	6.87	84.98	89.93	1.11	14.04	16.12	0.59	7.33	8.12
Dec-04	31	62,720	753,150	765,133	701	1.72	20.71	21.05	35.47	425.90	439.10	74.10	889.84	904.00	6.96	83.62	89.41	1.13	13.57	15.92	0.60	7.15	8.04
Jan-05	31	72,625	746,850	760,933	2,726	2.00	20.54	20.94	40.60	421.87	435.82	106.65	903.24	909.46	7.41	82.27	88.15	0.94	13.09	15.44	0.62	7.02	7.89
Feb-05	28	63,000	747,550	759,883	575	1.73	20.56	20.91	35.22	421.86	434.48	92.52	922.15	917.26	6.43	81.78	87.38	0.82	12.79	15.08	0.54	6.97	7.78
Mar-05	31	60,620	744,960	758,063	4,751	1.67	20.49	20.86	33.89	420.00	432.73	89.02	936.49	923.81	6.18	80.94	86.53	0.79	12.44	14.72	0.52	6.89	7.67
Apr-05	30	64,525	754,645	751,388	4,307	1.77	20.75	20.67	36.07	425.06	428.10	94.75	966.45	925.18	6.58	81.43	85.05	0.84	12.29	14.23	0.55	6.92	7.50
May-05	31	36,990	757,705	758,153	3,813	1.02	20.84	20.86	20.68	426.55	431.62	54.32	980.68	938.48	3.77	81.43	85.50	0.48	12.16	14.19	0.31	6.91	7.52
Jun-05	30	63,280	758,965	762,773	424	1.74	20.87	20.98	35.37	426.85	433.58	92.93	1,000.33	953.02	6.45	81.00	85.42	0.82	11.86	13.97	0.54	6.86	7.48
Jul-05	31	80,325	765,440	762,948	184	2.21	21.05	20.99	44.90	429.99	432.75	117.96	1,031.04	964.76	8.19	80.99	84.61	1.04	11.57	13.55	0.68	6.84	7.36
Aug-05	31	62,860	763,900	763,298	1,101	1.73	21.01	21.00	35.14	428.71	432.23	92.31	1,047.26	974.19	6.41	80.25	84.01	0.82	11.23	13.23	0.53	6.76	7.27
Sep-05	30	63,420	772,570	762,878	1,253	1.74	21.24	20.98	35.45	433.20	431.26	93.13	1,075.70	982.80	6.47	80.64	83.31	0.82	11.06	12.88	0.54	6.78	7.17
Oct-05	31	79,065	771,310	763,210	1,043	2.17	21.20	20.99	44.20	431.98	430.54	116.11	1,096.91	994.54	8.06	79.78	82.54	1.03	10.64	12.48	0.67	6.69	7.05
Nov-05	30	63,392	772,822	765,576	1,026	1.74	21.24	21.05	35.44	432.43	431.19	93.09	1,116.89	1,006.43	6.47	79.38	82.18	0.82	10.35	12.20	0.54	6.64	6.99
Dec-05	31	59,304	769,406	761,278	2,353	1.63	21.15	20.93	33.15	430.11	428.01	87.09	1,129.88	1,009.86	6.05	78.47	81.05	0.77	9.99	11.78	0.50	6.54	6.85
Jan-06	31	64,951	761,732	754,291	1,664	1.79	20.94	20.74	36.31	425.82	423.85	93.30	1,116.53	1,009.89	6.40	77.46	79.87	1.10	10.15	11.62	0.55	6.47	6.75
Feb-06	28	60,637	759,369	753,459	4,489	1.67	20.88	20.72	33.90	424.50	423.18	87.11	1,111.12	1,016.64	5.97	77.00	79.39	1.03	10.36	11.58	0.52	6.45	6.71
Mar-06	31	62,478	761,227	753,093	599	1.72	20.93	20.71	34.93	425.54	422.77	89.75	1,111.85	1,024.17	6.15	76.97	78.96	1.06	10.63	11.54	0.53	6.46	6.68
Apr-06	30	57,879	754,581	754,613	620	1.59	20.75	20.75	32.35	421.82	423.44	83.14	1,100.24	1,033.35	5.70	76.09	78.76	0.98	10.77	11.53	0.49	6.40	6.66
May-06	31	47,527	765,118	761,411	3,383	1.31	21.04	20.94	26.57	427.71	427.13	68.27	1,114.19	1,047.44	4.68	77.00	79.22	0.81	11.10	11.63	0.40	6.49	6.70
Jun-06	30	67,368	769,206	764,085	3,452	1.85	21.15	21.01	37.66	430.00	428.43	96.77	1,118.03	1,059.18	6.64	77.19	79.10	1.15	11.43	11.65	0.57	6.52	6.69
Jul-06	31	71,811	760,691	763,066	3,452	1.97	20.91	20.98	40.14	425.24	427.62	103.16	1,103.23	1,067.14	7.07	76.07	78.53	1.22	11.61	11.59	0.61	6.45	6.65
Aug-06	31	60,857	758,689	761,294	861	1.67	20.85	20.93	34.02	424.12	426.42	87.42	1,098.34	1,072.80	5.99	75.65	77.95	1.03	11.82	11.53	0.52	6.44	6.60
Sep-06	30	60,182	755,451	764,010	864	1.66	20.77	21.01	33.64	422.31	427.76	86.45	1,091.66	1,083.68	5.93	75.11	77.88	1.02	12.02	11.54	0.51	6.41	6.60
Oct-06	31	74,905	751,291	761,301	1,812	2.06	20.66	20.93	41.87	419.98	425.98	107.60	1,083.15	1,090.03	7.38	74.43	77.11	1.27	12.26	11.45	0.64	6.38	6.54
Nov-06	30	60,575	748,474	760,648	1,298	1.67	20.59	20.92	33.86	418.40	425.42	87.02	1,077.08	1,096.99	5.97	73.93	76.66	1.03	12.47	11.41	0.51	6.35	6.50
Dec-06	31	58,712	747,883	758,644	438	1.61	20.57	20.86	32.82	418.07	424.09	84.34	1,074.33	1,102.11	5.78	73.66	76.07	1.00	12.70	11.35	0.50	6.35	6.45
Jan-07	31	69,812	752,744	757,238	1,664	1.92	20.70	20.82	39.02	420.78	423.30	100.28	1,081.31	1,098.92	5.48	72.74	75.10	1.40	13.00	11.58	0.59	6.39	6.43
Feb-07	28	59,794	751,901	755,635	4,200	1.64	20.67	20.78	33.42	420.30	422.40	85.89	1,080.09	1,095.61	4.69	71.46	74.23	1.20	13.17	11.77	0.51	6.38	6.42
Mar-07	31	68,836	758,259	759,743	4,968	1.89	20.84	20.89	38.48	423.85	424.70	98.88	1,089.22	1,100.54	5.40	70.71	73.84	1.38	13.49	12.06	0.59	6.44	6.45
Apr-07	30	63,510	763,889	759,235	3,943	1.75	21.00	20.88	35.50	427.00	424.41	91.23	1,097.31	1,098.78	4.99	70.00	73.05	1.27	13.78	12.28	0.54	6.49	6.45
May-07	31	70,014	786,376	775,747	2,180	1.93	21.62	21.33	39.14	439.57	433.64	100.57	1,129.61	1,121.90	5.50	70.82	73.91	1.40	14.37	12.74	0.60	6.69	6.59
Jun-07	30	68,535	787,543	778,374	2,239	1.88	21.65	21.40	38.31	440.22	435.11	98.45	1,131.20	1,124.66	5.38	69.56	73.38	1.37	14.50	13.01	0.58	6.70	6.61
Jul-07	31	20,133	735,865	748,278	413	0.55	20.23	20.57	11.25	411.33	418.29	28.92	1,057.05	1,080.14	1.58	64.07	70.07	0.40	13.77	12.69	0.17	6.26	6.36
Aug-07	31	46,506	721,514	740,101	864	1.28	19.84	20.35	26.00	403.31	413.72	66.81	1,036.44	1,067.39	3.65	61.73	68.69	0.93	13.67	12.75	0.40	6.14	6.29
Sep-07	30	67,590	728,922	742,186	4,009	1.86	20.04	20.41	37.78	407.45	414.88	97.09	1,047.08	1,069.37	5.31	61.11	68.11	1.35	14.00	13.01	0.57	6.20	6.31
Oct-07	31	71,068	725,084	738,188	3,408	1.95	19.93	20.30	39.73	405.31	412.65	102.09	1,041.57	1,062.36	5.58	59.31	66.87	1.42	14.15	13.21	0.60	6.16	6.27
Nov-07	30	68,025	732,534	740,504	1,318	1.87	20.13	20.36	38.03	409.48	413.94	97.72	1,052.27	1,064.68	5.34	58.68	66.31	1.36	14.48	13.48	0.58	6.23	6.29

Table B-2. No. 4 Recovery Boiler Baseline Actual Emission Calculations for Pollutants with Variable Stack Test and CEMS Emission Factors

		BLS Throughput				SO_2			NO_x			CO			PM (Filterable Only)			VOC [c]			TRS [c]		
Month	Days	Monthly Total (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	No. 6 Fuel Oil (bbl/mo)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [a] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [a] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)	Monthly [b] (ton/mo)	12-month Total (tpy)	24-month Average (tpy)
Dec-07	31	70,944	744,765	746,324	2,559	1.95	20.47	20.52	39.66	416.32	417.20	101.91	1,069.84	1,072.09	5.57	58.47	66.07	1.42	14.90	13.80	0.60	6.33	6.34
Jan-08	31	73,796	748,749	750,746	2,713	0.28	18.83	19.77	41.25	418.55	419.67	106.01	1,075.57	1,078.44	6.72	59.71	66.23	1.66	15.16	14.08	0.94	6.68	6.54
Feb-08	29	67,686	756,641	754,271	2,125	3.11	20.30	20.49	37.84	422.97	421.64	97.23	1,086.91	1,083.50	6.16	61.18	66.32	1.52	15.48	14.33	0.83	7.00	6.69
Mar-08	31	72,695	760,500	759,379	1,607	0.48	18.89	19.87	40.64	425.13	424.49	104.43	1,092.46	1,090.84	6.62	62.40	66.56	1.64	15.74	14.62	0.92	7.33	6.89
Apr-08	30	64,755	761,745	762,817	4,475	0.69	17.83	19.42	36.20	425.83	426.42	93.02	1,094.25	1,095.78	5.89	63.30	66.65	1.46	15.93	14.86	0.55	7.34	6.92
May-08	31	69,812	761,544	773,960	4,396	5.01	20.91	21.27	39.02	425.71	432.64	100.28	1,093.96	1,111.79	6.35	64.15	67.49	1.57	16.10	15.24	0.42	7.16	6.93
Jun-08	30	67,725	760,734	774,138	4,817	3.67	22.70	22.18	37.86	425.26	432.74	97.29	1,092.80	1,112.05	6.16	64.93	67.25	1.52	16.25	15.42	0.39	6.97	6.84
Jul-08	31	74,183	814,784	775,324	2,919	0.23	22.38	21.31	41.47	455.48	433.41	106.56	1,170.44	1,113.75	6.75	70.10	67.09	1.67	17.52	15.65	0.49	7.29	6.78
Aug-08	31	63,364	831,642	776,578	9,273	3.56	24.66	22.25	35.42	464.90	434.11	91.02	1,194.65	1,115.55	5.77	72.22	66.98	1.43	18.02	15.85	0.35	7.24	6.69
Sep-08	30	67,515	831,567	780,244	6,161	8.54	31.34	25.69	37.74	464.86	436.16	96.99	1,194.55	1,120.82	6.14	73.05	67.08	1.52	18.19	16.10	0.28	6.95	6.58
Oct-08	31	45,220	805,719	765,402	1,141	5.62	35.01	27.47	25.28	450.41	427.86	64.96	1,157.42	1,099.50	4.12	71.59	65.45	1.02	17.79	15.97	0.20	6.55	6.36
Nov-08	30	64,125	801,819	767,176	10,213	0.44	33.58	26.86	35.85	448.23	428.86	92.12	1,151.82	1,102.05	5.84	72.09	65.39	1.44	17.87	16.18	0.23	6.20	6.22
Dec-08	31	46,175	777,050	760,908	7,746	5.95	37.58	29.03	25.81	434.38	425.35	66.33	1,116.24	1,093.04	4.20	70.72	64.60	1.04	17.49	16.20	0.26	5.86	6.10
Jan-09	31	46,655	749,910	749,329	13,349	6.95	44.25	31.54	30.83	423.96	421.26	55.99	1,066.22	1,070.90	3.31	67.31	63.51	1.35	17.18	16.17	0.40	5.32	6.00
Feb-09	28	44,338	726,562	741,601	5,039	19.80	60.94	40.62	27.04	413.16	418.07	38.55	1,007.54	1,047.23	3.15	64.30	62.74	1.29	16.95	16.22	0.29	4.78	5.89
Mar-09	31	61,318	715,185	737,842	3,822	7.26	67.72	43.31	34.64	407.16	416.15	40.03	943.14	1,017.80	4.35	62.03	62.22	1.78	17.09	16.42	0.35	4.21	5.77
Apr-09	30	51,510	701,940	731,842	12,210	0.62	67.65	42.74	32.33	403.29	414.56	59.85	909.97	1,002.11	3.66	59.80	61.55	1.49	17.12	16.53	0.30	3.96	5.65
May-09	31	50,654	682,782	722,163	3,998	0.53	63.17	42.04	23.81	388.08	406.90	27.61	837.30	965.63	3.60	57.05	60.60	1.47	17.02	16.56	0.22	3.76	5.46
Jun-09	30	43,320	658,377	709,555	6,150	10.36	69.86	46.28	24.82	375.04	400.15	25.25	765.26	929.03	3.08	53.97	59.45	1.26	16.76	16.51	0.29	3.66	5.32
Jul-09	31	61,613	645,806	730,295	1,308	0.32	69.95	46.17	29.14	362.71	409.10	51.25	709.95	940.20	4.37	51.59	60.85	1.79	16.88	17.20	0.34	3.51	5.40
Aug-09	31	51,197	633,639	732,640	12,594	2.75	69.14	46.90	32.77	360.06	412.48	43.17	662.10	928.38	3.63	49.45	60.84	1.48	16.93	17.48	0.33	3.49	5.37
Sep-09	30	62,595	628,719	730,143	2,941	0.47	61.07	46.21	31.61	353.93	409.40	62.68	627.79	911.17	4.44	47.75	60.40	1.82	17.23	17.71	0.32	3.53	5.24
Oct-09	31	71,161	654,659	730,189	2,625	0.53	55.98	45.50	34.05	362.70	406.56	92.12	654.95	906.19	5.05	48.68	60.14	2.06	18.27	18.03	0.40	3.73	5.14
Nov-09	30	67,680	658,214	730,017	3,365	10.30	65.84	49.71	33.54	360.39	404.31	86.97	649.80	900.81	4.81	47.65	59.87	1.96	18.79	18.33	0.48	3.98	5.09
Dec-09	31	65,596	677,636	727,343	3,336	3.57	63.46	50.52	36.75	371.33	402.86	80.89	664.36	890.30	4.66	48.11	59.42	1.90	19.65	18.57	0.63	4.35	5.11
Jan-10	31	45,072	676,053	712,981	9,950	9.57	66.08	55.17	29.72	370.22	397.09	61.02	669.39	867.81	3.20	48.00	57.66	1.31	19.61	18.40	0.48	4.43	4.88
Feb-10	28	33,273	664,988	695,775	3,057	15.20	61.48	61.21	21.39	364.57	388.87	27.00	657.84	832.69	2.36	47.21	55.76	0.96	19.28	18.12	0.17	4.31	4.55
Mar-10	31	72,308	675,977	695,581	3,779	5.49	59.71	63.72	39.11	369.04	388.10	61.95	679.76	811.45	5.13	47.99	55.01	2.10	19.60	18.35	0.45	4.41	4.31
Apr-10	30	67,050	691,517	696,728	3,135	0.96	60.05	63.85	34.59	371.30	387.30	72.37	692.28	801.13	4.76	49.09	54.45	1.94	20.05	18.59	0.41	4.52	4.24
May-10	31	60,497	701,360	692,071	7,672	9.20	68.72	65.95	35.54	383.03	385.56	65.60	730.27	783.79	4.30	49.79	53.42	1.75	20.33	18.68	0.35	4.65	4.21
Jun-10	30	62,820	720,860	689,618	2,223	0.26	58.62	64.24	32.14	390.35	382.70	60.05	765.07	765.17	4.46	51.17	52.57	1.82	20.89	18.83	0.35	4.71	4.19
Jul-10	31	65,860	725,107	685,456	1,625	3.82	62.12	66.04	34.90	396.11	379.41	75.00	788.82	749.39	4.68	51.48	51.54	1.91	21.01	18.95	0.40	4.77	4.14
Aug-10	31	69,440	743,350	688,494	2,218	0.29	59.66	64.40	33.87	397.21	378.64	92.83	838.48	750.29	4.93	52.78	51.12	2.01	21.54	19.24	0.31	4.75	4.12
Sep-10	30	66,555	747,310	688,014	3,491	0.28	59.47	60.27	32.96	398.56	376.25	54.70	830.50	729.15	4.73	53.07	50.41	1.93	21.65	19.44	0.26	4.69	4.11
Oct-10	31	61,597	737,747	696,203	4,525	1.20	60.14	58.06	31.71	396.22	379.46	40.52	778.90	716.93	4.37	52.39	50.54	1.79	21.38	19.83	0.21	4.50	4.12
Nov-10	30	59,610	729,677	693,945	1,419	0.32	50.16	58.00	30.69	393.37	376.88	62.60	754.53	702.17	4.23	51.81	49.73	1.73	21.15	19.97	0.20	4.22	4.10
Dec-10	31	53,119	717,199	697,417	7,833	19.85	66.44	64.95	34.21	390.83	381.08	44.48	718.12	691.24	3.77	50.92	49.52	1.54	20.79	20.22	0.32	3.91	4.13
Jan-11	31	58,218	730,345	703,199	4,011	1.18	58.05	62.07	31.43	392.54	381.38	61.49	718.59	693.99	4.13	51.85	49.93	1.69	21.17	20.39	0.30	3.73	4.08
Feb-11	28	31,714	728,786	696,887	3,751	21.16	64.01	62.75	19.25	390.40	377.49	45.80	737.39	697.62	2.25	51.74	49.48	0.92	21.13	20.21	0.22	3.78	4.05
Mar-11	31	64,728	721,206	698,592	4,997	6.08	64.60	62.16	33.69	384.98	377.01	67.94	743.38	711.57	4.60	51.21	49.60	1.88	20.91	20.26	0.45	3.78	4.10
Apr-11	30	61,575	715,731	703,624	3,725	11.11	74.75	67.40	30.68	381.07	376.19	92.79	763.80	728.04	4.37	50.82	49.96	1.79	20.76	20.41	1.19	4.56	4.54
May-11	31	58,327	713,562	707,461	5,576	13.37	78.92	73.82	30.96	376.49	379.76	56.01	754.21	742.24	4.14	50.66	50.23	1.69	20.70	20.52	0.41	4.62	4.64
Jun-11	30	62,565	713,307	717,083	2,114	9.54	88.20	73.41	30.56	374.91	382.63	79.28	773.44	769.26	4.44	50.64	50.91	1.81	20.69	20.79	0.45	4.72	4.72
Maximum =		81,025	831,642	782,405	13,349			73.82			453.23			1,124.66			94.80			17.67			8.74
Date =		Jan-03	Aug-08	Apr-04	Jan-09			May-11			Apr-04			Jun-07			Jan-04			Apr-04			Apr-04

a. PM emissions calculated here are filterable only.

b. For non-CEMS pollutants (PM and VOC) and months (before January 2009 for SO_2, NO_x, CO, and TRS):

Monthly Emissions (ton/mo) = Baseline Actual Emission Factor (lb/ton BLS) * BLS Throughput (ton/mo) * (ton/2,000 lb)

For CEMS data (January 2009 and beyond for SO_2, NO_x, CO, and TRS):

Monthly Emissions (ton/mo) = Calculated Emission Rate from CEMS Data (ton/mo)

Stack test emission factors and CEMS data are assumed to account for fuel oil emissions.

c. VOC emissions do not vary greatly from year-to-year; therefore, for simplicity, the baseline period is selected as May 2002 to April 2004 to correspond to the maximum 24-month average BLS throughput rate and to be consistent with multiple other pollutants. The TRS baseline period was also selected as May 2002 to April 2004 for simplicity.

Table B-3. No. 4 Recovery Boiler Black Liquor Solids Baseline Actual Emission Calculations for Non-GHG Pollutants with Constant Emission Factors

Pollutant	Baseline Actual Emission Factor (lb/ton)	Baseline Actual Emission Rate [a] (tpy)	Reference
Condensable $PM/PM_{10}/PM_{2.5}$	0.063	24.49	b
PM_{10}	-	67.59	b
$PM_{2.5}$	-	47.21	b
SAM	0.007	2.74	c
Lead	9.8E-06	3.8E-03	d
H_2S	1.7E-02	6.57	c

a. Since the emission factors are constant throughout the entire 10-year past actual period, maximum baseline emissions are obtained from the 24-month period with the maximum BLS throughput rate, which was the 24-month period ending April 30, 2004.
The annual average BLS throughput rate of that 24-month period = 782,405 tpy BLS
The condensable $PM/PM_{10}/PM_{2.5}$, filterable PM_{10}, and filterable $PM_{2.5}$ baseline period is defined by the filterable PM baseline period of February 2002 through January 2004, when the annual average BLS throughput rate = 777,600 tpy BLS

b. The condensable $PM/PM_{10}/PM_{2.5}$ emission factor is from Table 4.12 of NCASI Technical Bulletin 884 (August 2004).
The PM_{10} and $PM_{2.5}$ emission rates shown are only filterable and are calculated as a percentage of filterable PM.
Per Table 4.12 of NCASI Technical Bulletin 884 (August 2004), median values,
Condensable $PM/PM_{10}/PM_{2.5}$ = 0.063 lb/ton BLS
Filterable PM_{10} = 71.3% % of Filterable PM
Filterable $PM_{2.5}$ = 49.8% % of Filterable PM

c. Table 4.23 of NCASI Technical Bulletin No. 973 (February 2010), median values.

d. Table 4.24 of NCASI Technical Bulletin No. 973 (February 2010), median values.

Table B-4. No. 4 Recovery Boiler No. 6 Fuel Oil Baseline Actual Emission Calculations for Non-GHG Pollutants with Constant Emission Factors [a]

Pollutant	Baseline Actual Emission Factor (lb/mgal)	Baseline Actual Emission Rate [b] (tpy)	Reference
Condensable $PM/PM_{10}/PM_{2.5}$	1.5	0.35	c
SAM	9.3	1.69	c
Lead	1.5E-03	2.8E-04	c

a. Emissions from No. 6 fuel oil are assumed to be included in stack test and CEMS data and, therefore, encompassed in all emission factors developed from stack test and/or CEMS data. As such, separate emissions from combustion of No. 6 fuel oil are not calculated for SO_2, NO_x, CO, Filterable $PM/PM_{10}/PM_{2.5}$, VOC, and TRS.

b. The baseline periods and No. 6 fuel oil consumption during that period for these pollutants are as follows:
The condensable $PM/PM_{10}/PM_{2.5}$ baseline period is February 2002 through January 2004 and No. 6 fuel oil consumption during this period = 465 mgal/yr
The SAM and lead baseline period is May 2002 through April 2004 and No. 6 fuel oil consumption during this period = 364 mgal/yr

c. Emission factors are from AP-42, Chapter 1.3, Fuel Oil Combustion (September 1998).
The SAM emission factor depends on the sulfur content of the No. 6 fuel oil. For these calculations, the average sulfur content from 2007-2010 is used and equals: 1.63%

Table B-5. No. 4 Recovery Boiler Baseline Actual Emission Calculations for Greenhouse Gases [a]

	Black Liquor Solids				No. 6 Fuel Oil				No. 6 Fuel Oil			Black Liquor Solids		Total CO_2e [d,e]			Total GHG [d,f]		
	Throughput [b]		12-mo Total	24-mo Avg	Throughput [c]		12-mo Total	24-mo Avg	CO_2	CH_4	N_2O	CH_4	N_2O	Monthly [b]	12-mo Total	24-mo Avg	Monthly [b]	12-mo Total	24-mo Avg
Month	(ton/mo)	(MMBtu/mo)	(tpy)	(tpy)	(bbl/mo)	(MMBtu/mo)	(bbl/mo)	(bbl/mo)	(ton/mo)	(tpy)	(tpy)	(ton/mo)	(ton/mo)	(ton/mo)	(tpy)	(tpy)	(ton/mo)	(tpy)	(tpy)
Jan-02	67,900	783,294			8,256	52,011			4,306	1.7E-01	3.4E-02	25.85	4.31	6,198			4,336		
Feb-02	61,600	710,618			643	4,051			335	1.3E-02	2.6E-03	23.45	3.91	2,040			363		
Mar-02	60,900	702,542			2,126	13,394			1,109	4.4E-02	8.7E-03	23.18	3.86	2,797			1,136		
Apr-02	48,240	556,497			3,214	20,246			1,676	6.7E-02	1.3E-02	18.36	3.06	3,016			1,698		
May-02	61,040	704,157			1,779	11,210			928	3.7E-02	7.3E-03	23.24	3.87	2,620			955		
Jun-02	64,260	741,303			471	2,968			246	9.8E-03	1.9E-03	24.46	4.08	2,024			274		
Jul-02	78,400	904,422			578	3,641			301	1.2E-02	2.4E-03	29.85	4.97	2,471			336		
Aug-02	63,980	738,073			761	4,794			397	1.6E-02	3.1E-03	24.36	4.06	2,168			425		
Sep-02	63,140	728,383	770,535		1,449	9,127			756	3.0E-02	5.9E-03	24.04	4.01	2,505			784		
Oct-02	78,400	904,422	770,360		2,021	12,733			1,054	4.2E-02	8.3E-03	29.85	4.97	3,226			1,089		
Nov-02	53,820	620,868	761,460		1,273	8,019			664	2.6E-02	5.2E-03	20.49	3.41	2,155			688		
Dec-02	65,380	754,224	767,060		0	0	22,570		0	0.0E+00	0.0E+00	24.89	4.15	1,809	33,029		29	12,113	
Jan-03	81,025	934,704	780,185		233	1,466	14,547		121	4.8E-03	9.5E-04	30.85	5.14	2,363	29,194		157	7,934	
Feb-03	65,100	750,994	783,685		310	1,951	14,214		161	6.4E-03	1.3E-03	24.78	4.13	1,963	29,117		190	7,762	
Mar-03	64,260	741,303	787,045		436	2,747	12,524		227	9.1E-03	1.8E-03	24.46	4.08	2,006	28,325		256	6,882	
Apr-03	77,875	898,366	816,680		439	2,766	9,749		229	9.1E-03	1.8E-03	29.65	4.94	2,384	27,693		264	5,448	
May-03	23,460	270,635	779,100		1,500	9,450	9,470		782	3.1E-02	6.1E-03	8.93	1.49	1,434	26,508		793	5,285	
Jun-03	54,040	623,405	768,880		1,476	9,297	10,475		770	3.1E-02	6.0E-03	20.57	3.43	2,267	26,751		794	5,805	
Jul-03	79,975	922,592	770,455		0	0	9,897		0	0.0E+00	0.0E+00	30.45	5.07	2,212	26,492		36	5,504	
Aug-03	62,160	717,078	768,635		1,086	6,842	10,222		566	2.3E-02	4.4E-03	23.66	3.94	2,288	26,612		594	5,673	
Sep-03	64,260	741,303	769,755	770,145	118	743	8,891		62	2.5E-03	4.8E-04	24.46	4.08	1,839	25,946		90	4,979	
Oct-03	78,400	904,422	769,755	770,058	121	762	6,991		63	2.5E-03	5.0E-04	29.85	4.97	2,232	24,952		98	3,988	
Nov-03	58,660	676,702	774,595	768,028	714	4,499	6,432		372	1.5E-02	2.9E-03	22.33	3.72	1,996	24,794		398	3,699	
Dec-03	67,900	783,294	777,115	772,088	691	4,350	7,123	14,847	360	1.4E-02	2.8E-03	25.85	4.31	2,240	25,225	29,127	390	4,060	8,086
Jan-04	78,925	910,479	775,015	777,600	707	4,452	7,597	11,072	369	1.5E-02	2.9E-03	30.05	5.01	2,553	25,414	27,304	404	4,306	6,120
Feb-04	62,300	718,693	772,215	777,950	308	1,937	7,595	10,904	160	6.4E-03	1.3E-03	23.72	3.95	1,884	25,336	27,226	188	4,304	6,033
Mar-04	63,210	729,191	771,165	779,105	212	1,337	7,371	9,947	111	4.4E-03	8.7E-04	24.06	4.01	1,860	25,190	26,758	139	4,187	5,534
Apr-04	54,840	632,634	748,130	782,405	674	4,248	7,606	8,678	352	1.4E-02	2.8E-03	20.88	3.48	1,870	24,676	26,185	376	4,299	4,873
May-04	33,930	391,416	758,600	768,850	5,294	33,353	11,400	10,435	2,761	1.1E-01	2.2E-02	12.92	2.15	3,709	26,951	26,729	2,776	6,283	5,784
Jun-04	62,020	715,463	766,580	767,730	1,323	8,335	11,248	10,861	690	2.8E-02	5.4E-03	23.61	3.94	2,408	27,091	26,921	718	6,207	6,006
Jul-04	73,850	851,934	760,455	765,455	1,331	8,387	12,579	11,238	694	2.8E-02	5.5E-03	28.11	4.69	2,740	27,619	27,055	727	6,898	6,201
Aug-04	64,400	742,918	762,695	765,665	101	638	11,594	10,908	53	2.1E-03	4.1E-04	24.52	4.09	1,834	27,165	26,888	81	6,386	6,029
Sep-04	54,750	631,596	753,185	761,470	2,600	16,383	14,076	11,484	1,356	5.4E-02	1.1E-02	20.84	3.47	2,875	28,201	27,074	1,381	7,676	6,328
Oct-04	80,325	926,629	755,110	762,433	476	3,000	14,432	10,711	248	9.9E-03	2.0E-03	30.58	5.10	2,471	28,440	26,696	284	7,862	5,925
Nov-04	61,880	713,848	758,330	766,463	1,098	6,917	14,816	10,624	573	2.3E-02	4.5E-03	23.56	3.93	2,286	28,730	26,762	600	8,064	5,882
Dec-04	62,720	723,538	753,150	765,133	701	4,415	14,826	10,974	365	1.5E-02	2.9E-03	23.88	3.98	2,102	28,592	26,908	393	8,067	6,064
Jan-05	72,625	837,802	746,850	760,933	2,726	17,171	16,845	12,221	1,421	5.7E-02	1.1E-02	27.65	4.61	3,435	29,474	27,444	1,454	9,117	6,712
Feb-05	63,000	726,768	747,550	759,883	575	3,620	17,112	12,353	300	1.2E-02	2.4E-03	23.98	4.00	2,043	29,633	27,485	328	9,257	6,781
Mar-05	60,620	699,312	744,960	758,063	4,751	29,933	21,651	14,511	2,478	9.9E-02	1.9E-02	23.08	3.85	4,163	31,937	28,563	2,505	11,623	7,905
Apr-05	64,525	744,360	754,645	751,388	4,307	27,133	25,283	16,445	2,246	9.0E-02	1.8E-02	24.56	4.09	4,039	34,105	29,391	2,275	13,522	8,911
May-05	36,990	426,717	757,705	758,153	3,813	24,022	23,802	17,601	1,989	7.9E-02	1.6E-02	14.08	2.35	3,018	33,415	30,183	2,005	12,751	9,517
Jun-05	63,280	729,998	758,965	762,773	424	2,673	22,903	17,075	221	8.8E-03	1.7E-03	24.09	4.01	1,973	32,980	30,036	249	12,283	9,245
Jul-05	80,325	926,629	765,440	762,948	184	1,161	21,756	17,168	96	3.8E-03	7.5E-04	30.58	5.10	2,318	32,559	30,089	132	11,687	9,293
Aug-05	62,860	725,153	763,900	763,298	1,101	6,934	22,756	17,175	574	2.3E-02	4.5E-03	23.93	3.99	2,315	33,039	30,102	602	12,208	9,297
Sep-05	63,420	731,613	772,570	762,878	1,253	7,893	21,408	17,742	653	2.6E-02	5.1E-03	24.14	4.02	2,410	32,574	30,387	682	11,509	9,593
Oct-05	79,065	912,094	771,310	763,210	1,043	6,570	21,975	18,203	544	2.2E-02	4.3E-03	30.10	5.02	2,733	32,835	30,638	579	11,804	9,833
Nov-05	63,392	731,290	772,822	765,576	1,026	6,461	21,903	18,359	535	2.1E-02	4.2E-03	24.13	4.02	2,290	32,839	30,785	563	11,767	9,916
Dec-05	59,304	684,131	769,406	761,278	2,353	14,821	23,554	19,190	1,227	4.9E-02	9.6E-03	22.58	3.76	2,872	33,609	31,101	1,253	12,627	10,347
Jan-06	64,951	749,270	761,732	754,291	1,664	10,485	22,493	19,669	868	3.5E-02	6.8E-03	24.73	4.12	2,668	32,842	31,158	897	12,070	10,594
Feb-06	60,637	699,512	759,369	753,459	4,489	28,283	26,408	21,760	2,341	9.3E-02	1.8E-02	23.08	3.85	4,026	34,825	32,229	2,368	14,111	11,684
Mar-06	62,478	720,742	761,227	753,093	599	3,773	22,255	21,953	312	1.2E-02	2.5E-03	23.78	3.96	2,042	32,703	32,320	340	11,946	11,785
Apr-06	57,879	667,695	754,581	754,613	620	3,909	18,569	21,926	324	1.3E-02	2.5E-03	22.03	3.67	1,926	30,590	32,348	349	10,020	11,771
May-06	47,527	548,271	765,118	761,411	3,383	21,310	18,139	20,970	1,764	7.0E-02	1.4E-02	18.09	3.02	3,085	30,657	32,036	1,785	9,800	11,276
Jun-06	67,368	777,156	769,206	764,085	3,452	21,746	21,166	22,035	1,800	7.2E-02	1.4E-02	25.65	4.27	3,670	32,354	32,667	1,830	11,381	11,832
Jul-06	71,811	828,409	760,691	763,066	3,452	21,750	24,434	23,095	1,801	7.2E-02	1.4E-02	27.34	4.56	3,793	33,828	33,194	1,833	13,082	12,385
Aug-06	60,857	702,051	758,689	761,294	861	5,427	24,195	23,475	449	1.8E-02	3.5E-03	23.17	3.86	2,134	33,648	33,343	476	12,956	12,582
Sep-06	60,182	694,260	755,451	764,010	864	5,446	23,806	22,607	451	1.8E-02	3.5E-03	22.91	3.82	2,117	33,355	32,964	478	12,752	12,131
Oct-06	74,905	864,107	751,291	761,301	1,812	11,418	24,576	23,275	945	3.8E-02	7.4E-03	28.52	4.75	3,020	33,643	33,239	979	13,152	12,478
Nov-06	60,575	698,794	748,474	760,648	1,298	8,175	24,848	23,375	677	2.7E-02	5.3E-03	23.06	3.84	2,355	33,707	33,273	704	13,292	12,530
Dec-06	58,712	677,306	747,883	758,644	438	2,760	22,933	23,244	228	9.1E-03	1.8E-03	22.35	3.73	1,853	32,689	33,149	255	12,294	12,460
Jan-07	69,812	805,351	752,744	757,238	1,664	10,485	22,933	22,713	868	3.5E-02	6.8E-03	26.58	4.43	2,802	32,823	32,832	899	12,296	12,183
Feb-07	59,794	689,784	751,901	755,635	4,200	26,460	22,644	24,526	2,190	8.7E-02	1.7E-02	22.76	3.79	3,852	32,649	33,737	2,217	12,144	13,128
Mar-07	68,836	794,086	758,259	759,743	4,968	31,298	27,013	24,634	2,591	1.0E-01	2.0E-02	26.20	4.37	4,504	35,111	33,907	2,622	14,426	13,186
Apr-07	63,510	732,651	763,889	759,235	3,943	24,841	30,336	24,452	2,056	8.2E-02	1.6E-02	24.18	4.03	3,820	37,005	33,798	2,085	16,161	13,091

Table B-5. No. 4 Recovery Boiler Baseline Actual Emission Calculations for Greenhouse Gases [a]

	Black Liquor Solids				No. 6 Fuel Oil				No. 6 Fuel Oil			Black Liquor Solids		Total CO_2e [d, e]			Total GHG [d, f]		
	Throughput [b]		12-mo Total	24-mo Avg	Throughput [c]		12-mo Total	24-mo Avg	CO_2	CH_4	N_2O	CH_4	N_2O	Monthly [b]	12-mo Total	24-mo Avg	Monthly [b]	12-mo Total	24-mo Avg
Month	(ton/mo)	(MMBtu/mo)	(tpy)	(tpy)	(bbl/mo)	(MMBtu/mo)	(bbl/mo)	(bbl/mo)	(ton/mo)	(tpy)	(tpy)	(ton/mo)	(ton/mo)	(ton/mo)	(tpy)	(tpy)	(ton/mo)	(tpy)	(tpy)
May-07	70,014	807,676	786,376	775,747	2,180	13,735	29,133	23,636	1,137	4.5E-02	8.9E-03	26.65	4.44	3,078	36,998	33,827	1,168	15,544	12,672
Jun-07	68,535	790,620	787,543	778,374	2,239	14,108	27,921	24,543	1,168	4.7E-02	9.2E-03	26.09	4.35	3,068	36,396	34,375	1,198	14,912	13,147
Jul-07	20,133	232,254	735,865	748,278	413	2,601	24,881	24,658	215	8.6E-03	1.7E-03	7.66	1.28	773	33,376	33,602	224	13,304	13,193
Aug-07	46,506	536,493	721,514	740,101	864	5,444	24,884	24,539	451	1.8E-02	3.5E-03	17.70	2.95	1,739	32,980	33,314	471	13,299	13,128
Sep-07	67,590	779,718	728,922	742,186	4,009	25,254	28,028	25,917	2,091	8.3E-02	1.6E-02	25.73	4.29	3,967	34,830	34,093	2,121	14,942	13,847
Oct-07	71,068	819,835	725,084	738,188	3,408	21,470	29,624	27,100	1,777	7.1E-02	1.4E-02	27.05	4.51	3,749	35,559	34,601	1,809	15,773	14,462
Nov-07	68,025	784,736	732,534	740,504	1,318	8,302	29,644	27,246	687	2.7E-02	5.4E-03	25.90	4.32	2,571	35,776	34,741	718	15,787	14,540
Dec-07	70,944	818,404	744,765	746,324	2,559	16,122	31,765	27,349	1,335	5.3E-02	1.0E-02	27.01	4.50	3,302	37,224	34,956	1,366	16,898	14,596
Jan-08	73,796	851,305	748,749	750,746	2,713	17,092	32,814	27,874	1,415	5.6E-02	1.1E-02	28.09	4.68	3,461	37,883	35,353	1,448	17,447	14,871
Feb-08	67,686	780,826	756,641	754,271	2,125	13,388	30,739	26,691	1,108	4.4E-02	8.7E-03	25.77	4.29	2,984	37,015	34,832	1,138	16,368	14,256
Mar-08	72,695	838,610	760,500	759,379	1,607	10,124	27,378	27,195	838	3.3E-02	6.6E-03	27.67	4.61	2,852	35,363	35,237	870	14,617	14,522
Apr-08	64,755	747,014	761,745	762,817	4,475	28,191	27,910	29,123	2,334	9.3E-02	1.8E-02	24.65	4.11	4,133	35,676	36,340	2,363	14,895	15,528
May-08	69,812	805,351	761,544	773,960	4,396	27,692	30,125	29,629	2,293	9.1E-02	1.8E-02	26.58	4.43	4,231	36,830	36,914	2,324	16,050	15,797
Jun-08	67,725	781,276	760,734	774,138	4,817	30,345	32,702	30,312	2,512	1.0E-01	2.0E-02	25.78	4.30	4,394	38,156	37,276	2,542	17,394	16,153
Jul-08	74,183	855,775	814,784	775,324	2,919	18,389	35,208	30,045	1,522	6.1E-02	1.2E-02	28.24	4.71	3,579	40,962	37,169	1,555	18,725	16,015
Aug-08	63,364	730,967	831,642	776,578	9,273	58,421	43,617	34,251	4,836	1.9E-01	3.8E-02	24.12	4.02	6,605	45,829	39,404	4,865	23,119	18,209
Sep-08	67,515	778,853	831,567	780,244	6,161	38,815	45,770	36,899	3,213	1.3E-01	2.5E-02	25.70	4.28	5,091	46,953	40,892	3,243	24,242	19,592
Oct-08	45,220	521,658	805,719	765,402	1,141	7,188	43,503	36,563	595	2.4E-02	4.7E-03	17.21	2.87	1,848	45,052	40,305	615	23,048	19,410
Nov-08	64,125	739,746	801,819	767,176	10,213	64,344	52,398	41,021	5,327	2.1E-01	4.2E-02	24.41	4.07	7,118	49,599	42,687	5,355	27,686	21,736
Dec-08	46,175	532,669	777,050	760,908	7,746	48,797	57,585	44,675	4,040	1.6E-01	3.2E-02	17.58	2.93	5,330	51,627	44,425	4,060	30,380	23,639
Jan-09	46,655	538,212	749,910	749,329	13,349	84,098	68,221	50,517	6,962	2.8E-01	5.5E-02	17.76	2.96	8,275	56,442	47,162	6,983	35,915	26,681
Feb-09	44,338	511,483	726,562	741,601	5,039	31,743	71,134	50,937	2,628	1.0E-01	2.1E-02	16.88	2.81	3,863	57,320	47,168	2,648	37,424	26,896
Mar-09	61,318	707,364	715,185	737,842	3,822	24,081	73,350	50,364	1,994	7.9E-02	1.6E-02	23.34	3.89	3,696	58,165	46,764	2,021	38,575	26,596
Apr-09	51,510	594,219	701,940	731,842	12,210	76,926	81,086	54,498	6,368	2.5E-01	5.0E-02	19.61	3.27	7,814	61,846	48,761	6,391	42,604	28,749
May-09	50,654	584,345	682,782	722,163	3,998	25,188	80,688	55,406	2,085	8.3E-02	1.6E-02	19.28	3.21	3,493	61,108	48,969	2,108	42,388	29,219
Jun-09	43,320	499,740	658,377	709,555	6,150	38,744	82,021	57,362	3,207	1.3E-01	2.5E-02	16.49	2.75	4,416	61,131	49,643	3,227	43,072	30,233
Jul-09	61,613	710,762	645,806	730,295	1,308	8,242	80,411	57,809	682	2.7E-02	5.4E-03	23.46	3.91	2,389	59,940	50,451	710	42,227	30,476
Aug-09	51,197	590,603	633,639	732,640	12,594	79,345	83,732	63,675	6,569	2.6E-01	5.2E-02	19.49	3.25	8,006	61,341	53,585	6,592	43,953	33,536
Sep-09	62,595	722,096	628,719	730,143	2,941	18,531	80,512	63,141	1,534	6.1E-02	1.2E-02	23.83	3.97	3,271	59,521	53,237	1,562	42,272	33,257
Oct-09	71,161	820,908	654,659	730,189	2,625	16,537	81,996	62,750	1,369	5.5E-02	1.1E-02	27.09	4.51	3,342	61,015	53,033	1,401	43,057	33,053
Nov-09	67,680	780,756	658,214	730,017	3,365	21,201	75,148	63,773	1,755	7.0E-02	1.4E-02	25.76	4.29	3,633	57,530	53,564	1,785	39,487	33,586
Dec-09	65,596	756,715	677,636	727,343	3,336	21,019	70,739	64,162	1,740	6.9E-02	1.4E-02	24.97	4.16	3,560	55,760	53,694	1,769	37,196	33,788
Jan-10	45,072	519,951	676,053	712,981	9,950	62,682	67,339	67,780	5,189	2.1E-01	4.1E-02	17.16	2.86	6,453	53,937	55,189	5,209	35,422	35,669
Feb-10	33,273	383,837	664,988	695,775	3,057	19,258	65,358	68,246	1,594	6.4E-02	1.3E-02	12.67	2.11	2,520	52,594	54,957	1,609	34,384	35,904
Mar-10	72,308	834,139	675,977	695,581	3,779	23,806	65,314	69,332	1,971	7.9E-02	1.5E-02	27.53	4.59	3,978	52,875	55,520	2,003	34,366	36,470
Apr-10	67,050	773,489	691,517	696,728	3,135	19,749	56,238	68,662	1,635	6.5E-02	1.3E-02	25.53	4.25	3,495	48,556	55,201	1,665	29,639	36,121
May-10	60,497	697,888	701,360	692,071	7,672	48,332	59,912	70,300	4,001	1.6E-01	3.1E-02	23.03	3.84	5,688	50,751	55,930	4,028	31,560	36,974
Jun-10	62,820	724,692	720,860	689,618	2,223	14,003	55,985	69,003	1,159	4.6E-02	9.1E-03	23.91	3.99	2,901	49,236	55,183	1,187	29,520	36,296
Jul-10	65,860	759,755	725,107	685,456	1,625	10,238	56,302	68,356	848	3.4E-02	6.7E-03	25.07	4.18	2,672	49,519	54,729	877	29,687	35,957
Aug-10	69,440	801,060	743,350	688,494	2,218	13,971	45,925	64,828	1,157	4.6E-02	9.1E-03	26.43	4.41	3,081	44,594	52,968	1,188	24,283	34,118
Sep-10	66,555	767,778	747,310	688,014	3,491	21,995	46,475	63,494	1,821	7.3E-02	1.4E-02	25.34	4.22	3,668	44,991	52,256	1,851	24,572	33,422
Oct-10	61,597	710,583	737,747	696,203	4,525	28,510	48,375	65,186	2,360	9.4E-02	1.9E-02	23.45	3.91	4,072	45,721	53,368	2,388	25,559	34,308
Nov-10	59,610	687,661	729,677	693,945	1,419	8,942	46,430	60,789	740	3.0E-02	5.8E-03	22.69	3.78	2,392	44,480	51,005	767	24,540	32,014
Dec-10	53,119	612,775	717,199	697,417	7,833	49,348	50,926	60,832	4,085	1.6E-01	3.2E-02	20.22	3.37	5,568	46,487	51,124	4,109	26,880	32,038
Jan-11	58,218	671,603	730,345	703,199	4,011	25,271	44,988	56,164	2,092	8.3E-02	1.6E-02	22.16	3.69	3,709	43,744	48,841	2,118	23,789	29,606
Feb-11	31,714	365,847	728,786	696,887	3,751	23,632	45,682	55,520	1,956	7.8E-02	1.5E-02	12.07	2.01	2,840	44,064	48,329	1,971	24,150	29,267
Mar-11	64,728	746,702	721,206	698,592	4,997	31,481	46,901	56,107	2,606	1.0E-01	2.0E-02	24.64	4.11	4,405	44,492	48,684	2,635	24,782	29,574
Apr-11	61,575	710,329	715,731	703,624	3,725	23,468	47,491	51,865	1,943	7.7E-02	1.5E-02	23.44	3.91	3,652	44,649	46,603	1,970	25,088	27,364
May-11	58,327	672,860	713,562	707,461	5,576	35,129	45,395	52,654	2,908	1.2E-01	2.3E-02	22.20	3.70	4,531	43,492	47,122	2,934	23,994	27,777
Jun-11	62,565	721,750	713,307	717,083	2,114	13,318			1,103	4.4E-02	8.7E-03	23.82	3.97	2,837	43,429	46,332	1,130	23,937	26,729
Maximum =	81,025	934,704	831,642	782,405	13,349		83,732	70,300			5.5E-02					55,930			36,974
Date =	Jan-03	Jan-03	Aug-08	Apr-04	Jan-09		Aug-09	May-10			Jan-09					May-10			May-10

a. Greenhouse gas emission factors are obtained from Subpart C (No. 6 fuel oil) and Subpart AA (BLS) of EPA's Mandatory Reporting Rule for Greenhouse Gases.

CO_2 (No. 6 Fuel Oil) =	165.57	lb/MMBtu	
CH_4 (No. 6 Fuel Oil) =	6.6E-03	lb/MMBtu	
N_2O (No. 6 Fuel Oil) =	1.3E-03	lb/MMBtu	
Biogenic CO_2 (BLS) =	208.12	lb/MMBtu	HIDE GREY ROWS
CH_4 (BLS) =	6.6E-02	lb/MMBtu	
N_2O (BLS) =	1.1E-02	lb/MMBtu	

b. BLS throughput in MMBtu is based on the average heat content of BLS from mill records of 2008 - 2011 (Btu/lb) = 5,768

c. No. 6 fuel oil throughput in MMBtu is based on the average heat content from the Mandatory Reporting Rule (MMBtu/gal) = 0.15

Table B-5. No. 4 Recovery Boiler Baseline Actual Emission Calculations for Greenhouse Gases [a]

	Black Liquor Solids				No. 6 Fuel Oil				No. 6 Fuel Oil			Black Liquor Solids		Total CO_2e [d, e]			Total GHG [d, f]		
	Throughput [b]		12-mo Total	24-mo Avg	Throughput [c]		12-mo Total	24-mo Avg	CO_2	CH_4	N_2O	CH_4	N_2O	Monthly [b]	12-mo Total	24-mo Avg	Monthly [b]	12-mo Total	24-mo Avg
Month	(ton/mo)	(MMBtu/mo)	(tpy)	(tpy)	(bbl/mo)	(MMBtu/mo)	(bbl/mo)	(bbl/mo)	(ton/mo)	(tpy)	(tpy)	(ton/mo)	(ton/mo)	(ton/mo)	(tpy)	(tpy)	(ton/mo)	(tpy)	(tpy)

d. Inclusion of biogenic CO_2 in PSD permitting analyses has been deferred for three years per 40 CFR S2.21(b)(40(ii)(a). Because U.S. EPA is the GHG permitting authority in the State of Florida, the federal PSD rules are in effect for GHGs and the biogenic CO_2 permitting deferral is in place. Therefore, biogenic CO_2 emissions are excluded from this permitting analysis.

e. Total CO_2e emissions = CO_2 from No. 6 Fuel Oil + CH_4 GWP (21) * (CH_4 from No. 6 Fuel Oil + CH_4 from BLS) + N_2O GWP (310) * (N_2O from No. 6 Fuel Oil + N_2O from BLS)

f. Total GHG emissions = CO_2 from No. 6 Fuel Oil + CH_4 from No. 6 Fuel Oil + CH_4 from BLS + N_2O from No. 6 Fuel Oil + N_2O from BLS

Table B-6. Summary of Baseline Actual Emissions for the No. 4 Recovery Boiler

Pollutant	Baseline Period	Baseline BLS Throughput (tpy)	Baseline Actual Emission Rate [a] (tpy)	Effective Baseline Emission Factor [b] (lb/ton BLS)
SO_2	Jun 09 - May 11	707,461	73.82	0.209
NO_X	May 02 - Apr 04	778,374	453.23	1.165
CO	Jul 05 - Jun 07	772,088	1,124.66	2.913
PM	Feb 02 - Jan 04	777,600	119.64	0.308
PM_{10}	Feb 02 - Jan 04	777,600	92.43	0.238
$PM_{2.5}$	Feb 02 - Jan 04	777,600	72.05	0.185
VOC	May 02 - Apr 04	778,374	17.67	0.045
TRS	May 02 - Apr 04	778,374	8.74	0.022
SAM	May 02 - Apr 04	782,405	4.43	1.1E-02
Lead	May 02 - Apr 04	782,405	4.1E-03	1.1E-05
H_2S	May 02 - Apr 04	782,405	6.57	1.7E-02
GHG	Jun 08 - May 10	N/A	36,974	N/A
CO_2e	Jun 08 - May 10	N/A	55,930	N/A

a. PM, PM_{10}, and $PM_{2.5}$ emission rates include both filterable and condensable particulate matter.
b. The effective baseline emission factor is used to calculate emissions that could have been accommodated during the baseline period. It includes emissions from BLS and No. 6 fuel oil in the baseline period.

Table B-7. No. 4 Recovery Boiler Projected Actual Emission Calculations for Non-GHG PSD Pollutants from BLS

Pollutant	Projected Actual Emission Factor (lb/ton)	Projected Actual Emission Rate [a] (tpy)	Reference
SO_2	0.219	91.59	b
NO_X	1.227	512.89	c
CO	3.093	1,292.87	c
PM	0.325	135.85	d
PM_{10}	0.250	104.50	e
$PM_{2.5}$	0.194	81.09	e
VOC	0.074	30.93	c
TRS	0.023	9.61	c
SAM	1.2E-02	4.97	b
Lead	1.1E-05	4.6E-03	b
H_25	1.8E-02	7.37	b

a. Projected Actual Emission Rate (tpy) = Emission Factor (lb/ton) * Projected Actual BLS Throughput (tpy) * (ton/2,000 lb)
Projected Actual BLS Throughput (tpy) = 836,000
b. Projected actual emission factor is the effective baseline emission factor, which includes the No. 6 fuel oil contribution, with a 5% safety factor.
c. Projected actual emission factor is the median plus one standard deviation of the combination of all valid stack test and CEMS-based actual emission factors. The factor is normalized to BLS but includes emissions from No. 6 fuel oil by virtue of fuel oil being consumed during testing or CEMS operation.
d. Projected actual emission factor is the median plus one standard deviation of all filterable PM stack tests plus the condensable PM emission factor. The filterable PM factor is normalized to BLS but includes emissions from No. 6 fuel oil by virtue of fuel oil being consumed during testing or CEMS operation. In addition, baseline emissions of condensable PM from No. 6 fuel was normalized to BLS and is included in this factor as well.
e. Projected actual emission factor is determined by multiplying the median plus one standard deviation of all filterable PM stack test by the % $PM_{10}/PM_{2.5}$ from Table 4.12 NCASI Technical Bulleting 884 (August 2004) and adding the condensable PM emission factor.

Table B-8. No. 4 Recovery Boiler Projected Actual Emission Calculations for Greenhouse Gases

Pollutant	Projected Actual Emission Factor (lb/MMBtu)	Projected Actual Emission Rate [a] (tpy)	Reference
GHG			
No. 6 Fuel Oil	165.58	43,672	b
BLS	7.7E-02	371	c
CO_2e			
No. 6 Fuel Oil	165.63	43,685	b
BLS	4.80	23,127	c

a. Projected Actual Emission Rate (tpy) = Emission Factor (lb/MMBtu) * Projected Actual Fuel Throughput (MMBtu/yr) * (ton/2,000 lb)
Projected Actual BLS Throughput (MMBtu/yr) = 9,644,096
Projected Actual No. 6 Fuel Oil Throughput (MMBtu/yr) = 527,510 (Estimated as the maximum 12-month total.)
b. For No. 6 fuel oil:
GHG Emission Factor = CO_2 Emission Factor + CH_4 Emission Factor + N_2O Emission Factor
CO_2e Emission Factor = CO_2 Emission Factor + CH_4 Emission Factor * CH_4 GWP (21) + N_2O Emission Factor * N_2O GWP (310)
Greenhouse gas emission factors are obtained from Subpart C (No. 6 fuel oil) of EPA's Mandatory Reporting Rule for Greenhouse Gases.
CO_2 (No. 6 Fuel Oil) = 165.57 lb/MMBtu
CH_4 (No. 6 Fuel Oil) = 6.6E-03 lb/MMBtu
N_2O (No. 6 Fuel Oil) = 1.3E-03 lb/MMBtu
c. For Black liquor Solids:
GHG Emission Factor = CH_4 Emission Factor + N_2O Emission Factor
CO_2e Emission Factor = CH_4 Emission Factor * CH_4 GWP (21) + N_2O Emission Factor * N_2O GWP (310)
Greenhouse gas emission factors are obtained from Subpart AA (BLS) of EPA's Mandatory Reporting Rule for Greenhouse Gases.
CH_4 (BLS) = 6.6E-02 lb/MMBtu
N_2O (BLS) = 1.1E-02 lb/MMBtu

Table B-9. No. 4 Recovery Boiler Could Have Accommodated Black Liquor Solids Processing Rates

Baseline Period for PM, PM_{10}, and $PM_{2.5}$ (Feb 02 - Jan 04)					Baseline Period for NO_X, VOC, TRS, SAM, Lead, & H_2S (May 02 - Apr 04)					Baseline Period for CO (Jul 05 - Jun 07)					Baseline Period for SO_2 (Jun 09 - May 11)				
Month	Days	Monthly BLS Throughput (ton/mo)	Annualized BLS Throughput [a] (tpy)	CHA BLS Throughput [b] (tpy)	Month	Days	Monthly BLS Throughput (ton/mo)	Annualized BLS Throughput [a] (tpy)	CHA BLS Throughput [b] (tpy)	Month	Days	Monthly BLS Throughput (ton/mo)	Annualized BLS Throughput [a] (tpy)	CHA BLS Throughput [b] (tpy)	Month	Days	Monthly BLS Throughput (ton/mo)	Annualized BLS Throughput [a] (tpy)	CHA BLS Throughput [b] (tpy)
Feb-02	28	61,600	758,887	758,887	May-02	31	61,040	679,215	679,215	Jul-05	31	80,325	893,807	836,000	Jun-09	30	43,320	498,106	498,106
Mar-02	31	60,900	677,657	677,657	Jun-02	30	64,260	738,880	738,880	Aug-05	31	62,860	699,467	699,467	Jul-09	31	61,613	685,586	685,586
Apr-02	30	48,240	554,678	554,678	Jul-02	31	78,400	872,387	836,000	Sep-05	30	63,420	729,222	729,222	Aug-09	31	51,197	569,683	569,683
May-02	31	61,040	679,215	679,215	Aug-02	31	63,980	711,930	711,930	Oct-05	31	79,065	879,786	836,000	Sep-09	30	62,595	719,736	719,736
Jun-02	30	64,260	738,880	738,880	Sep-02	30	63,140	726,002	726,002	Nov-05	30	63,392	728,900	728,900	Oct-09	31	71,161	791,830	791,830
Jul-02	31	78,400	872,387	836,000	Oct-02	31	78,400	872,387	836,000	Dec-05	31	59,304	659,898	659,898	Nov-09	30	67,680	778,204	778,204
Aug-02	31	63,980	711,930	711,930	Nov-02	30	53,820	618,838	618,838	Jan-06	31	64,951	722,730	722,730	Dec-09	31	65,596	729,912	729,912
Sep-02	30	63,140	726,002	726,002	Dec-02	31	65,380	727,508	727,508	Feb-06	28	60,637	747,028	747,028	Jan-10	31	45,072	501,533	501,533
Oct-02	31	78,400	872,387	836,000	Jan-03	31	81,025	901,596	836,000	Mar-06	31	62,478	695,213	695,213	Feb-10	28	33,273	409,910	409,910
Nov-02	30	53,820	618,838	618,838	Feb-03	28	65,100	802,006	802,006	Apr-06	30	57,879	665,512	665,512	Mar-10	31	72,308	804,593	804,593
Dec-02	31	65,380	727,508	727,508	Mar-03	31	64,260	715,045	715,045	May-06	31	47,527	528,851	528,851	Apr-10	30	67,050	770,961	770,961
Jan-03	31	81,025	901,596	836,000	Apr-03	30	77,875	895,430	836,000	Jun-06	30	67,368	774,616	774,616	May-10	31	60,497	673,168	673,168
Feb-03	28	65,100	802,006	802,006	May-03	31	23,460	261,048	261,048	Jul-06	31	71,811	799,065	799,065	Jun-10	30	62,820	722,323	722,323
Mar-03	31	64,260	715,045	715,045	Jun-03	30	54,040	621,368	621,368	Aug-06	31	60,857	677,184	677,184	Jul-10	31	65,860	732,844	732,844
Apr-03	30	77,875	895,430	836,000	Jul-03	31	79,975	889,912	836,000	Sep-06	30	60,182	691,990	691,990	Aug-10	31	69,440	772,685	772,685
May-03	31	23,460	261,048	261,048	Aug-03	31	62,160	691,678	691,678	Oct-06	31	74,905	833,499	833,499	Sep-10	30	66,555	765,269	765,269
Jun-03	30	54,040	621,368	621,368	Sep-03	30	64,260	738,880	738,880	Nov-06	30	60,575	696,510	696,510	Oct-10	31	61,597	685,413	685,413
Jul-03	31	79,975	889,912	836,000	Oct-03	31	78,400	872,387	836,000	Dec-06	31	58,712	653,315	653,315	Nov-10	30	59,610	685,413	685,413
Aug-03	31	62,160	691,678	691,678	Nov-03	30	58,660	674,490	674,490	Jan-07	31	69,812	776,825	776,825	Dec-10	31	53,119	591,070	591,070
Sep-03	30	64,260	738,880	738,880	Dec-03	31	67,900	755,549	755,549	Feb-07	28	59,794	736,638	736,638	Jan-11	31	58,218	647,814	647,814
Oct-03	31	78,400	872,387	836,000	Jan-04	31	78,925	878,228	836,000	Mar-07	31	68,836	765,959	765,959	Feb-11	28	31,714	390,698	390,698
Nov-03	30	58,660	674,490	674,490	Feb-04	29	62,300	741,045	741,045	Apr-07	30	63,510	730,257	730,257	Mar-11	31	64,728	720,253	720,253
Dec-03	31	67,900	755,549	755,549	Mar-04	31	63,210	703,362	703,362	May-07	31	70,014	779,067	779,067	Apr-11	30	61,575	708,007	708,007
Jan-04	31	78,925	878,228	836,000	Apr-04	30	54,840	630,566	630,566	Jun-07	30	68,535	788,035	788,035	May-11	31	58,327	649,027	649,027
Maximum =		81,025	901,596	836,000	Maximum =		81,025	901,596	836,000	Maximum =		80,325	893,807	836,000	Maximum =		72,308	804,593	804,593

a. Annualized BLS Throughput = Monthly BLS Throughput (ton/mo) * 12 mo/yr * Average Uptime of the No. 4 Recovery Boiler from 2002 - 2010 (%)
Average Annual Uptime of No. 4 Recovery Boiler from 2002 - 2010 = 94.5%

b. Because could have accommodated is a subset of projected actual, the CHA BLS throughput rate is the minimum of the Annualized BLS Throughput (tpy) and the Projected Actual BLS Throughput (tpy).

Table B-10. No. 4 Recovery Boiler Could Have Accommodated Emission Rates

Pollutant	Could Have Accommodated Emission Factor [a] (lb/ton)	Chould Have Accommodated BLS Throughput Rate (tpy)	Could Have Accommodated Emission Rate (tpy)
SO_2	0.209	804,593	83.96
NO_X	1.165	836,000	486.78
CO	2.913	836,000	1,217.76
PM	0.308	836,000	128.62
PM_{10}	0.238	836,000	99.37
$PM_{2.5}$	0.185	836,000	77.46
VOC	0.045	836,000	18.97
TRS	0.022	836,000	9.38
SAM	1.1E-02	836,000	4.73
Lead	1.1E-05	836,000	4.4E-03
H_2S	1.7E-02	836,000	7.02

a. The could have accommodated emission factor is the effective baseline actual emission factor as calculated by dividing the baseline actual emissions by the BLS throughput rate during the actual baseline period.

Table B-11. No. 4 Recovery Boiler Floor Tube Replacement Project Emission Increase Summary and Permitting Applicability Analysis

Quantity	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	VOC (tpy)	TRS (tpy)	SAM (tpy)	Lead (tpy)	H_2S (tpy)	GHG (tpy)	CO_2e (tpy)
Baseline Actual Emissions (BAE)	73.8	453.2	1,124.7	119.6	92.4	72.1	17.7	8.7	4.4	4.1E-03	6.6	36,974	55,930
Projected Actual Emissions (PAE)	91.6	512.9	1,292.9	135.9	104.5	81.1	30.9	9.6	5.0	4.6E-03	7.4	44,043	66,811
Could Have Accomodated (CHA) Emissions [a]	84.0	486.8	1,217.8	128.6	99.4	77.5	19.0	9.4	4.7	4.4E-03	7.0	ND	ND
Excludable Emissions (EE) [b]	10.1	33.6	93.1	9.0	6.9	5.4	1.3	0.6	0.3	2.8E-04	0.5	ND	ND
Emissions Increase (PAE - BAE - EE)	7.6	26.1	75.1	7.2	5.1	3.6	12.0	0.2	0.2	2.2E-04	0.4	7,070	10,882
PSD Significant Emission Rate (SER)	40	40	100	25	15	10	40	10	7	0.6	10	0	75,000
PSD Triggered? [c]	No	No	No	No	No	No	No	No	No	No	No	No	

a. The emission rate of each pollutant that the No. 4 Recovery Boiler "could have accommodated" during the baseline period is calculated from the annualized value of the highest monthly black liquor solids throughput rate during the baseline period and the effective baseline emission factor. In no instance is the could have accommodated emission rate greater than the projected actual emission rate.

b. The quantity of emissions that are unrelated to the project and are excluded from the emission increase calculation for each pollutant is equal to the could have accommodated emission rate minus the baseline actual emission rate. Could have accommodated emissions and, therefore, excludable emissions are not determined for GHGs.

c. The emissions increase for both GHG and CO_2e must exceed their respective thresholds for PSD to be triggered.

ATTACHMENT C

APPLICATION FOR AIR PERMIT – LONG FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

RECEIVED
DEC 22 2011
DIVISION OF AIR RESOURCE MANAGEMENT

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Georgia-Pacific Consumer Operations LLC**	
2. Site Name: **Palatka Mill**	
3. Facility Identification Number: **1070005**	
4. Facility Location... Street Address or Other Locator: **215 County Road 216** City: **Palatka** County: **Putnam** Zip Code: **32178-0919**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Ron Reynolds, Environmental Engineer - Air Quality**
2. Application Contact Mailing Address... Organization/Firm: **Georgia-Pacific Consumer Operations LLC** Street Address: **215 County Road 216** City: **Palatka** State: **FL** Zip Code: **32178-0919**
3. Application Contact Telephone Numbers... Telephone: **(386) 329-0967** ext. Fax: **(386) 328-0014**
4. Application Contact E-mail Address: **ron.reynolds@gapac.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 12-22-11	3. PSD Number (if applicable):
2. Project Number(s): 1070005-072-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

Air Construction Permit application to replace the steam floor tubes of the No. 4 Recovery Boiler (EU018). There are 131 floor tubes, which comprise about 0.4 percent of the total heating surface of the boiler.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
018	No. 4 Recovery Boiler	AC1B	N/A

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Gary L. Frost, Vice-President Manufacturing
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Georgia-Pacific Consumer Operations LLC**
   Street Address: **215 County Road 216**
   City: **Palatka** State: **FL** Zip Code: **32178-0919**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(386) 329-0063** ext. Fax: **(386) 312-1135**
4. Owner/Authorized Representative E-mail Address: **gary.frost@gapac.com**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

   Signature Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source or CAIR source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) ext. Fax: ( )

5. Application Responsible Official E-mail Address:

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

_____ _____

Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Mark Aguilar**
   Registration Number: **52248**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Georgia-Pacific LLC**
   Street Address: **133 Peachtree Street**
   City: **Atlanta** State: **Georgia** Zip Code: **30303**
3. Professional Engineer Telephone Numbers...
   Telephone: **(404)652-4293** ext. Fax: ( )
4. Professional Engineer E-mail Address: **mjaguila@gapac.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(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

(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.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, 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.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, 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 ☐, 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.

(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 ☐, 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.

Signature 12-19-2011 Date

(seal)

Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **434.0** North (km) **3,283.4**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **29 / 41 / 00** Longitude (DD/MM/SS) **81 / 40 / 45**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **26**	6. Facility SIC(s): **2611** **2621**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **Ron Reynolds, Environmental Engineer - Air Quality**
2. Facility Contact Mailing Address... Organization/Firm: **Georgia-Pacific Consumer Operations LLC** Street Address: **P.O. Box 919** City: **Palatka** State: **FL** Zip Code: **32178-0919**
3. Facility Contact Telephone Numbers: Telephone: **(386) 329-0967** ext. Fax: **(386) 328-0014**
4. Facility Contact E-mail Address: **ron.reynolds@gapac.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) ext. Fax: ( )
4. Facility Primary Responsible Official E-mail Address:

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter Total – PM	A	N
Particulate Matter – PM10	A	N
Particulate Matter – PM2.5	A	N
Sulfur Dioxide – SO2	A	N
Nitrogen Oxides – NOx	A	N
Carbon Monoxide – CO	A	N
Volatile Organic Compounds – VOC	A	N
Lead – Pb	A	N
Sulfuric Acid Mist – SAM	A	N
Total Reduced Sulfur – TRS	A	N
Beryllium – H021	A	N
Benzene – H017	A	N
m-Cresol – H051	A	N
Formaldehyde – H095	A	N
Hexachlorocyclopentadiene – H100	A	N
Methanol – H115	A	N
Naphthalene – H132	A	N
Phenol – H144	A	N
Toluene – H169	A	N
1,2,4-Trichlorobenzene – H174	A	N
o-Xylene – H187	A	N
Hazardous Air Pollutants – HAPS	A	N
Hydrogen Sulfide – H2S	A	N
Greenhouse Gases-GHGs	A	N
Carbon dioxide Equivalent-CO_2e	A	N

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Acetaldehyde – H001	**A**	**N**
Cadmium – H027	**A**	**N**
Chloroform – H043	**A**	**N**
Cobalt – H047	**A**	**N**
n-Hexane – H104	**A**	**N**
Hydrogen Chloride – H106	**A**	**N**
Manganese – H113	**A**	**N**
Mercury – H114	**A**	**N**
Methanol – H115	**A**	**N**
Methyl Ethyl Ketone – H120	**A**	**N**
Methyl Isobutyl Ketone – H123	**A**	**N**
Methylene Chloride – H128	**A**	**N**
Naphthalene – H132	**A**	**N**
Nickel – H133	**A**	**N**
Selenium – H162	**A**	**N**
Styrene – H163	**A**	**N**
Tetrachloroethylene – H167	**A**	**N**
m-Xylene – H188	**A**	**N**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot 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: **GP-FI-C1** ☐ Previously Submitted, Date:_____

2. Process Flow Diagram(s): (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: **GP-FI-C2** ☐ Previously Submitted, Date:_____

3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (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: **GP-FI-C3** ☐ Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   ☐ Attached, Document ID:_____ ☒ Not Applicable (existing permitted facility)

2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):
   ☒ Attached, Document ID: **Cover Letter**

3. Rule Applicability Analysis:
   ☒ Attached, Document ID: **Cover Letter**

4. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)

5. Fugitive Emissions Identification:
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    ☐ Attached, Document ID:_____ ☒ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☐ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
   ☐ Attached, Document ID:_____
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
   ☐ Attached, Document ID:_____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities Onsite but Not Required to be Individually Listed
   ☐ Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:_____ ☐ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

   Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not an Acid Rain source)

   Phase II NO_X Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

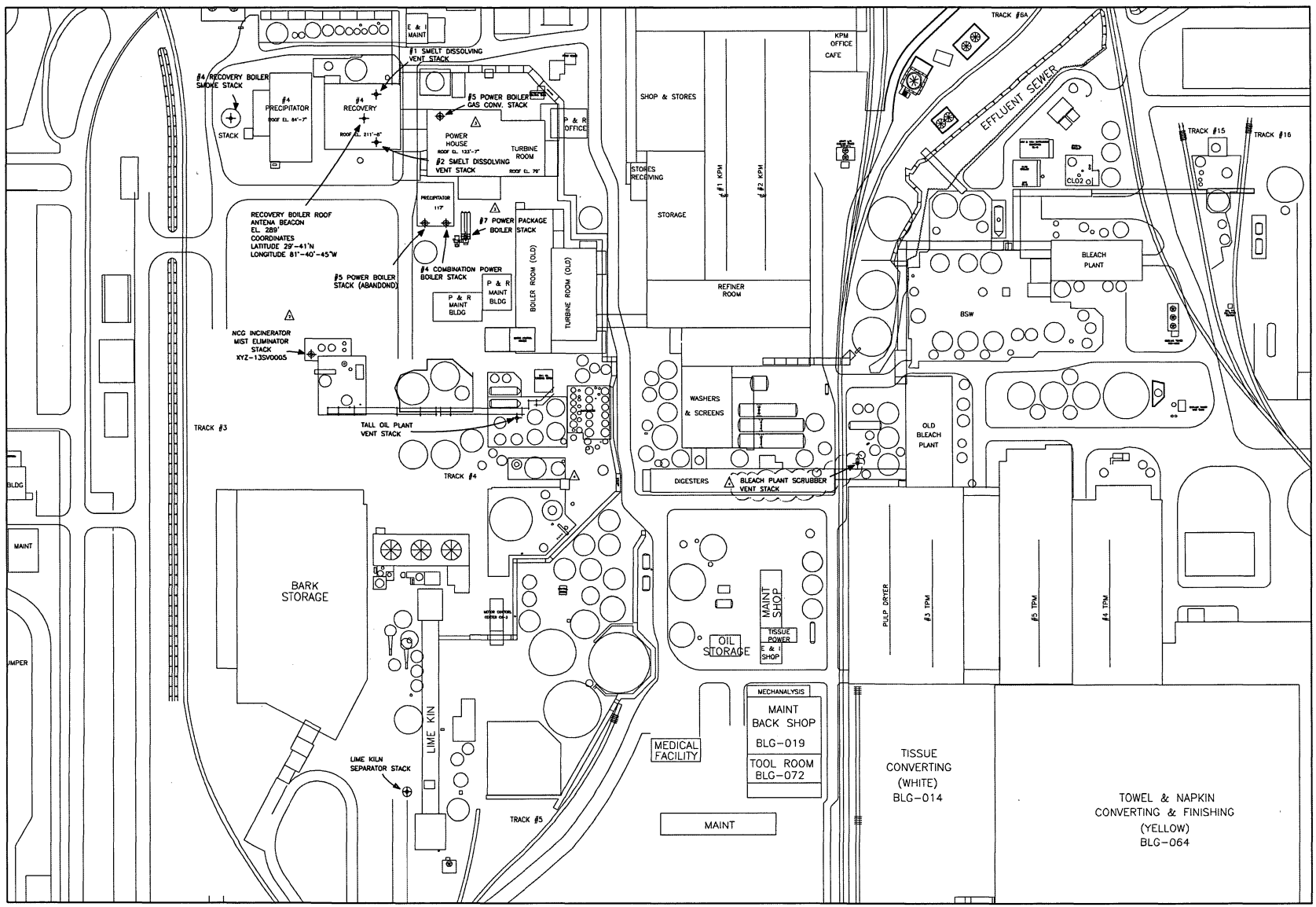
   New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not a CAIR source)

Additional Requirements Comment

ATTACHMENT GP-FI-C1

FACILITY PLOT PLAN



MILL STACKS

	MILL STACKS	EQUIP NO.	BASE EL.	HEIGHT	STACK EL.	ID.	REF. DWG.
	NCG INCINERATOR MIST ELIMINATOR STACK	XYZ-13SV0005	28'	250'-1 1/2"	278'-1 1/2"	25.5"	G-P 291-8595ME-000-0039-002
	#4 COMBINATION BOILER STACK	BHP-2003	121'-6"	133'-8	255'-2"	8'	Research - Cottrell 291-5219/5228-1-03
ABANDON	#5 POWER BOILER STACK	BHP-2006	121'-6"	133'-8"	255'-2"	8'	Research - Cottrell 291-5219/5228-1-03
	#5 POWER BOILER GAS CONVERSION STACK	BHP-	123'-7 1/8"	50'-0"	173'-7 1/8"	9'	G-P 291-5228ME-002-0015-004, 005
	#4 RECOVERY BOILER SMOKE STACK	XYZ-5521	19'	230'	249'	12'	Rust Eng. 27-68-37
	#1 SMELT DISSOLVING VENT STACK	XYZ-5514	33'-3"	188'-9"	222'	4'-11"	Rust Eng. 27-68-51
	#2 SMELT DISSOLVING VENT STACK	XYZ-5515	33'-3"	188'-9"	222'	4'-11"	Rust Eng. 27-68-51
	LIME KILN SEPARATOR STACK	SPR-5057	71'-6"	77'-6"	149'	4'-5 1/4"	Rust Eng. 27-16-50
	TALL OIL PLANT VENT STACK		19'-0"	64'-6"	83'-6"	1'-4"	G-P 297-7810-034
	#7 POWER PACKAGE BOILER STACK	BHP-2007	36' ±	20'-4"	56' ±	6'	G-P 291-5220-001-0019-002
	BLEACH PLANT SCRUBBER VENT STACK	XYZ-	27'-1"	81'-8"	108'-9"	3'-7"	G-P 295-5614-302-05

REF. DWG.

Peabody Dwg. 5170-2
Zurn Dwg. 6-750-DE1
Zurn Dwg. 6-750-DE2X
Zurn Dwg. C-36470-2, D-39846
Wallace-Murray Dwg. File 297-7810-12-01

NOTES

REV.	DATE	DESCRIPTION	DRN.	CHK.	AP'D
4	9/1/99	ADDED BLEACH PLANT SCRUBBER STACK	VHT		
3	5/18/99	ADDED NO.5 POWER BLR GAS CONV. STACK	VHT		
2	11/18/85	NO. 7 POWER PACKAGE BOILER WAS NO.8	VHT		
		ADDED NCG INCINERATOR MIST ELIM. STACK			
1	9/11/85	REPLACED BORDER	JCH	VHT	

CROSS-REFERENCE NO.

HUDSON NO.

Georgia-Pacific

THE GROWTH COMPANY

PALATKA OPERATIONS

MILL STACKS
LOCATION PLAN
POLLUTION CONTROL

DRAWN	VHT	10/29/99	SCALE
CHECKED			RES NO.
APPROVED			FILENAME 00018363.dwg
APPROVED			AREA 83

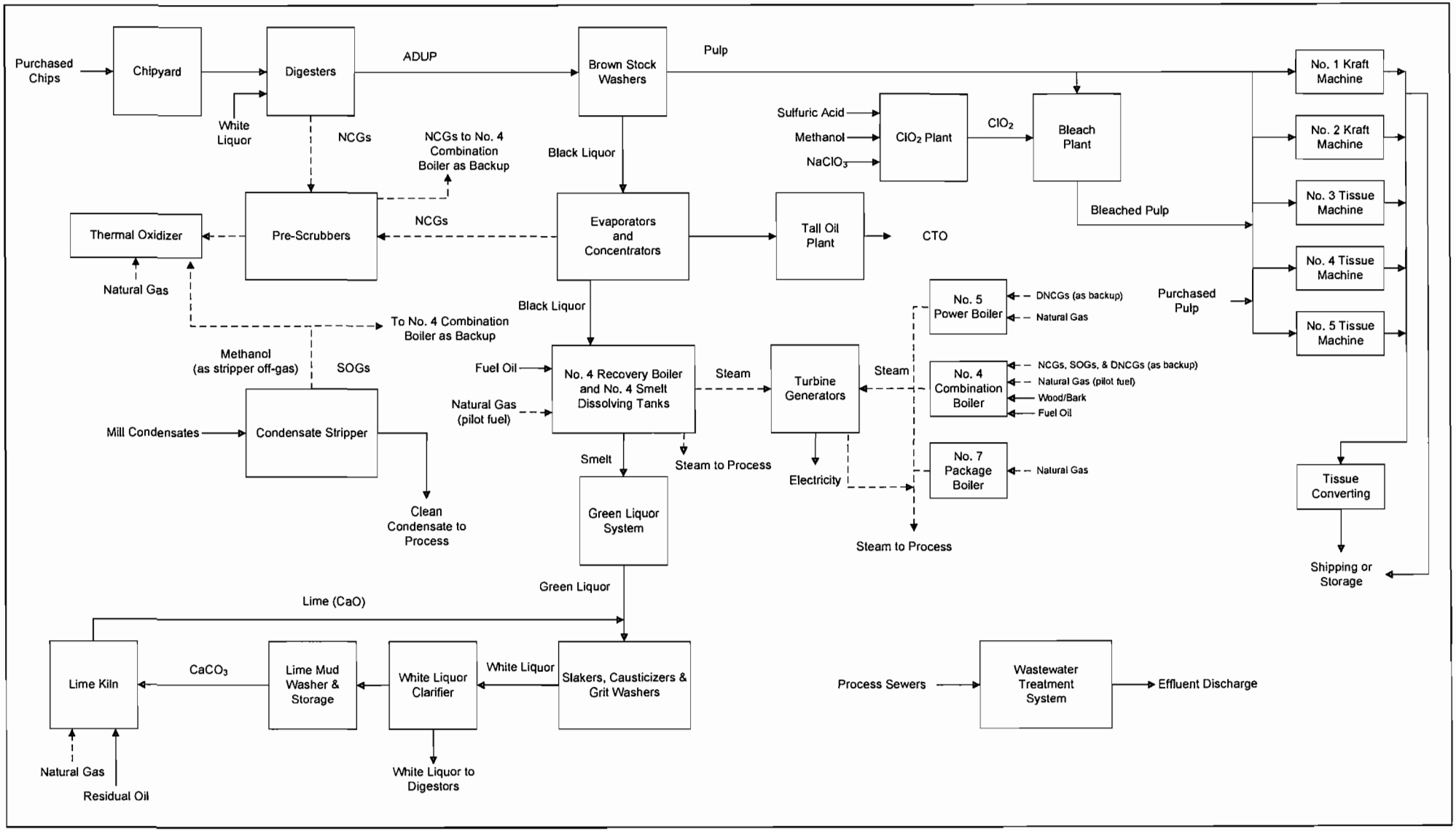
G-P DRAWING NO.
290-8464MS-000-0016-001

CONSULTANT NO.

REV: 4

ATTACHMENT GP-FI-C2

PROCESS FLOW DIAGRAM



Attachment GP-FI-C2
Facility Process Flow Diagram
Georgia-Pacific Palatka Operations
Palatka, Florida

Notes:
ADUP = Air Dried Unbleached Pulp
CTO = Crude Tall Oil
Solid/Liquid ——→
Gas - - - - →

Golder Associates

Y:\Projects\2011\113-87755 GP Palatka\AC Pmt\Draft-Final_121511\Atts\FIGP-FI-C2.vsd

ATTACHMENT GP-FI-C3

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

ATTACHMENT GP-FI-C3

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include:

- Conveyors that are covered or enclosed where feasible and practical
- Paved roads entering and exiting the plant
- Limiting vehicle speeds
- Good housekeeping practices

III. EMISSIONS UNIT INFORMATION

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 an initial, revised or renewal 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. 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 an 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 or 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. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes 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]
No. 4 Recovery Boiler

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.)

☐ 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).

☐ 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:
No. 4 Recovery Boiler

3. Emissions Unit Identification Number: **018**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
A	**September 1974**	**December 1976**	**26**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:
The No. 4 Recovery Boiler fires black liquor solids (BLS) to recover the cooking liquor. Its total maximum operational rate is 210,000 pounds per hour (lb/hr) BLS based on a 24-hour average. Residual fuel oil is fired as startup, shutdown, and supplemental fuel.

EMISSIONS UNIT INFORMATION
Section [1]
No. 4 Recovery Boiler

Emissions Unit Control Equipment/Method: Control 1 of 3

1. Control Equipment/Method Description: **Electrostatic Precipitator- High Efficiency**
2. Control Device or Method Code: **010**

Emissions Unit Control Equipment/Method: Control 2 of 3

1. Control Equipment/Method Description: **Overfire Air**
2. Control Device or Method Code: **204**

Emissions Unit Control Equipment/Method: Control 3 of 3

1. Control Equipment/Method Description: **Combustion design and good operating practices**
2. Control Device or Method Code: **099**

Emissions Unit Control Equipment/Method: Control _____ of _____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

B. EMISSIONS UNIT CAPACITY INFORMATION
(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **210,000 lb /hr Black Liquor Solids (BLS)**	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **1,345** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. *Requested Maximum* Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:

Process rate based on 24-hour average. Maximum heat input rate based on average heating value of 6,410 Btu/lb for BLS.

Maximum fuel oil consumption [No. 6 fuel oil, on-spec used oil, and ultra low-sulfur diesel (ULSD) fuel] limited to 7,860,640 gallons per any consecutive 12 months.

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: **No. 4 Recovery Boiler**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **230** feet	7. Exit Diameter: **12.0** feet
8. Exit Temperature: **400**°F	9. Actual Volumetric Flow Rate: **432,000** acfm	10. Water Vapor: **21** %
11. Maximum Dry Standard Flow Rate: **294,000** dscfm **@ 8% oxygen**	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: **17** East (km): **433.9025** North (km): **3,283.6442**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 5

1. Segment Description (Process/Fuel Type): **Pulp and Paper and Wood Products; Sulfite (Kraft) Pulping; Recovery Furnace/Indirect Contact Evaporator**		
2. Source Classification Code (SCC): **3-07-001-10**	3. SCC Units: **Tons air-dried unbleached pulp produced**	
4. Maximum Hourly Rate: **118**	5. Maximum Annual Rate: **675,250**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **11.4**
10. Segment Comment: **All BLS from pulp production process can be sent to Recovery Boiler. No. 4 Recovery Boiler limited by permit to 210,000 lb/hr BLS (24-hour average). Capacity of Pulp Mill = 118 ADTP per hour and 1,850 ADTP per day.**		

Segment Description and Rate: Segment 2 of 5

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Industrial; Distillate Oil;Grade 1 and 2 Oil**		
2. Source Classification Code (SCC): **1-02-004-05**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **0.28**	5. Maximum Annual Rate: **2,452.8**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.0015**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **140**
10. Segment Comment: **Ultra low-sulfur diesel (ULSD) -- Maximum sulfur content limit is by weight.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment **3** of **5**

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Residual Oil**		
2. Source Classification Code (SCC): **3-90-004-99**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **4.840**	5. Maximum Annual Rate: **7,860.64**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **2.35**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**
10. Segment Comment: **Maximum Annual rate based on consumption of all fuel oil(No.6, on specification used oil, and virgin ULSD) in PSD-380-FL. Maximum hourly rate based on 8 load burners with capacity of 480 gallons per hour (gal/hr) each and 4 startup burners with capacity of 250 gal/hr each.**		

Segment Description and Rate: Segment **4** of **5**

1. Segment Description (Process/Fuel Type): **External Combustion Boilers; Industrial; Natural Gas <10 Million Btu/hr**		
2. Source Classification Code (SCC): **1-02-006-03**	3. SCC Units: **Million Cubic Feet Burned**	
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: **Natural Gas used as pilot fuel only (Ignitors).**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment **5** of **5**

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; General**		
2. Source Classification Code (SCC): **3-90-004-89**	3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: **786.064**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **On-specification used oil only. Is limited to 10 percent of the oil consumed. Permit No. PSD-FL-380/1070005-038-AC.**		

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:		

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
PM	010		EL
PM10			NS
PM2.5			NS
SO2			EL
NOx	204		EL
CO	099		EL
VOC	099		EL
Pb			NS
SAM			EL
TRS			EL
Acetaldehyde – H001			EL
Arsenic – H015			NS
Beryllium – H021			EL
Benzene – H017			NS
Cadmium – H027			NS
Chloroform – H043			NS
Cobalt – H047			NS
Formaldehyde – H095			NS
n-Hexane – H104			NS
Hydrogen Chloride – H106			NS
Manganese – H113			NS
Mercury – H114			NS
Methanol – H115			NS
Methyl Ethyl Ketone – H120			NS
Methyl Isobutyl Ketone – H123			NS
Methylene Chloride – H128			NS
Naphthalene – H132			NS
Nickel – H133			NS
Selenium – H162			NS
Styrene – H163			NS
Hydrogen Sulfide – H2S			NS
Tetrachloroethylene – H167			NS
Toluene – H169			NS
1,2,4-Trichlorobenzene – H174			NS
o-Xylene – H187			NS
m-Xylene – H188			NS
Total Hazardous Air Pollutants – HAPS			NS
Greenhouse Gases-GHGs			NS
CO_2e			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **75.6** lb/hour **331.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.030 grains/dscf @ 8% oxygen** Reference: **Rule 62-212.400(BACT) and Permit No. 1070005-038-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **119.64** tons/year	8.b. Baseline 24-month Period: From: **02/2002** To: **01/2004**
9.a. Projected Actual Emissions (if required): **135.85** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: **294,000 dscfm x 0.030 gr/dscf x 60 min/hr x 1 lb/7,000 gr = 75.6 lb/hr**

Annual: **75.6 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 331.1 TPY**

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.030 grains/dscf @ 8% oxygen**	4. Equivalent Allowable Emissions: **75.6** lb/hour **331.1** tons/year
5. Method of Compliance: **EPA Method 5 or 29**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-212.400(BACT) and Permit No. 1070005-038-AC**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **75.6** lb/hour **331.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.030 grains/dscf @ 8% oxygen** Reference: **Permit No. 1070005-038-AC**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): **92.43** tons/year	8.b. Baseline 24-month Period: From: **02/2002** To: **01/2004**
9.a. Projected Actual Emissions (if required): **104.50** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: **294,000 dscfm x 0.030 gr/dscf x 60 min/hr x 1 lb/7,000 gr = 75.6 lb/hr**

Annual: **75.6 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 331.1 TPY**

11. Potential, Fugitive, and Actual Emissions Comment:

All of PM assumed to be PM_{10}

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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):	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM2.5**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **37.8** lb/hour **165.56** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.015 gr/dscf @ 8% O2** Reference: **NCASI TB #884, Table 4.12**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): **72.05** tons/year	8.b. Baseline 24-month Period: From: **02/2002** To: **01/2004**
9.a. Projected Actual Emissions (if required): **81.09** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 294,000 dscfm x 0.015 gr/dscf x 60 min/hr x 1 lb/7,000 gr = 37.8 lb/hr

Annual: 37.8 x 8,760 hr/hr x 1 ton/2,000 lb = 165.56 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

PM2.5 emissions assumed to be 49.8 percent of PM emissions.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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):	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **292.8** lb/hour **153.9** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **100 ppmvd @ 8% oxygen (24-hour average)** Reference: **Permit No. 1070005-050-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **73.82** tons/year	8.b. Baseline 24-month Period: From: **06/2009** To: **05/2011**
9.a. Projected Actual Emissions (if required): **91.59** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly (24-hr average):

294,000 dscfm x 100 ppm/10^6 x 2,116.8 lb_f/ft^2 x lb_m-°R/1,545.6 ft-lb_f x 1/528°R x 64 lb_m/lb-mol x 60 min/hr = 292.8 lb/hr

Annual: 153.9 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

Potential hourly emissions are based on a 24-hr average.
Annual limit is based on Permit No. 1070005-064-AV.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **100 ppmvd @ 8% O_2 (24-hour average)**	4. Equivalent Allowable Emissions: **292.8** lb/hour **153.9** tons/year
5. Method of Compliance: **SO2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 1070005-050-AC.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour **153.9** tons/year
5. Method of Compliance: **SO2 CEMS (12-month rolling)**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 1070005-050-AC.**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **168.5** lb/hour **738.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **80 ppmvd @ 8% O_2 (30-day rolling avg.)** Reference: **Rule 62-212.400 (BACT), F.A.C.**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **453.23** tons/year	8.b. Baseline 24-month Period: From: **05/2002** To: **04/2004**
9.a. Projected Actual Emissions (if required): **512.89** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:

294,000 dscfm x 80 ppm/10^6 x 2,116.8 lb_f/ft^2 x lb_m-°R/1,545.6 ft-lb_f x 1/528°R x 46 lb_m/lb-mol x 60 min/hr = 168.5 lb/hr

Annual:

168.5 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 738.1 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

Potential hourly emissions are based on a 30-day rolling average.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **80 ppmvd @ 8% O_2 (30 day rolling avg.)**	4. Equivalent Allowable Emissions: **168.5** lb/hour **738.1** tons/year
5. Method of Compliance: **NOx CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-212.400 (BACT), F.A.C.**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **512.7** lb/hour **2,245.6** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **400 ppmvd @ 8% O_2 (30-day rolling avg.)** Reference: **Rule 62-212.400 (BACT), F.A.C;Permit No. 1070005-038-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **1,124.66** tons/year	8.b. Baseline 24-month Period: From: **01/2002** To: **12/2003**
9.a. Projected Actual Emissions (if required): **1,292.87** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:

294,000 dscfm x 400 ppm/10^6 x 2,116.8 lb_f/ft^2 x lb_m-°R/1,545.6 ft-lb_f x 1/528°R x 28 lb_m/lb-mol x 60 min/hr = 512.7 lb/hr

Annual:

512.7 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 2,245.6 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

Potential hourly emissions are based on a 30-day rolling average.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **400 ppmvd @ 8% O_2 (30-day rolling avg.)**	4. Equivalent Allowable Emissions: **512.7** lb/hour **2,245.6** tons/year
5. Method of Compliance: **Based on CO CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-212.400 (BACT), F.A.C and Permit No. 1070005-038-AC Hourly emissions based on 30-day rolling average.**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **21.0** lb/hour **92.0** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.2 lb/ton BLS** Reference: **Permit No. 1070005-038-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **17.67** tons/year	8.b. Baseline 24-month Period: From: **05/2002** To: **04/2004**
9.a. Projected Actual Emissions (if required): **30.93** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 0.2 lb/ton BLS x 210,000 lb BLS/hr x 1 ton/2,000 lb = 21.0 lb/hr

Annual: 21.0 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 92.0 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.2 lb/ton BLS**	4. Equivalent Allowable Emissions: **21.0** lb/hour **92.0** tons/year
5. Method of Compliance: **EPA Method 25A**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-212.400 (BACT), F.A.C and Permit No. 1070005-038-AC**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **Pb**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.0010** lb/hour **0.0045** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **9.81×10^{-6} lb/ton of BLS** Reference: **NCASI TB-973 Table 4.24 (median)**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): **4.1×10^{-3}** tons/year	8.b. Baseline 24-month Period: From: **05/2002** To: **04/2004**
9.a. Projected Actual Emissions (if required): **4.6×10^{-3}** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years
10. Calculation of Emissions: **Hourly: 9.81×10^{-6} lb/ton BLS x (210,000 lb BLS/hr / 2,000 lb/ton) = 0.0010 lb/hr** **Annual: 0.0010 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 0.0045 TPY**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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):	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SAM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **3.6** lb/hour **15.9** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.81 ppmvd** Reference: **Permit No. 1070005-064-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **4.43** tons/year	8.b. Baseline 24-month Period: From: **05/2002** To: **04/2004**
9.a. Projected Actual Emissions (if required): **4.97** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:

294,000 dscfm x 0.81 ppm/10^6 x 2,116.8 lb_f/ft^2 x 1 lb_m-°R/1,545.6 ft-lb_f x 1/528°R x 98 lb_m/lb-mol x 60 min/hr = 3.6 lb/hr

Annual:

3.6 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 15.9 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.81 ppmvd**	4. Equivalent Allowable Emissions: **3.6** lb/hour **15.9** tons/year
5. Method of Compliance: **EPA Method 8**	
6. Allowable Emissions Comment (Description of Operating Method): **BACT; Permit No. AC54-266676; PSD-FL-226**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **TRS**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7.8** lb/hour **34.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **34.2 TPY (12-month rolling total)** Reference: **Permit No. 1070005-038-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): **8.88** tons/year	8.b. Baseline 24-month Period: From: **01/2002** To: **12/2003**
9.a. Projected Actual Emissions (if required): **9.61** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 34.2 TPY x 2,000 lb/1 ton x 1 yr/8,760 hr = 7.8 lb/hr

Annual: 34.2 TPY

11. Potential, Fugitive, and Actual Emissions Comment:
Potential hourly emissions are based on a 30-day rolling total.
Annual emissions based on Permit No. 1070005-038-AC.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **34.2 TPY (12-month rolling total)**	4. Equivalent Allowable Emissions: **7.8** lb/hour **34.2** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-212.400(12),F.A.C and Permit No. 1070005-038-AC. Hourly emissions based on 12-month rolling average.**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **Beryllium – H021**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **$6.4x10^{-4}$** lb/hour **$2.8x10^{-3}$** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.475 lb/10^{12} Btu** Reference: **Permit No. AC54-266676**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 1,345 MMBtu/hr x 0.475 lb/10^{12} Btu = $6.4x10^{-4}$ lb/hr

Annual: $6.4x10^{-4}$ lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = $2.8x10^{-3}$ TPY

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.475 lb/10^{12} Btu**	4. Equivalent Allowable Emissions: **6.4×10^{-4}** lb/hour **2.8×10^{-3}** tons/year
5. Method of Compliance: **EPA Method 104**	
6. Allowable Emissions Comment (Description of Operating Method): **BACT, Permit No. AC54-266676,PSD-FL-226**	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H2S**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.76** lb/hour **7.72** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **1.68×10^{-2} lb/ton BLS** Reference: **NCASI TB 973 Table 4.23 (Median)**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): **6.57** tons/year	8.b. Baseline 24-month Period: From: **05/2002** To: **04/2004**
9.a. Projected Actual Emissions (if required): **7.37** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 1.68×10^{-2} lb/ton BLS x (210,000 lb BLS/hr / 2,000 lb/ton) = 1.76 lb/hr

Annual: 1.76 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 7.72 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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):	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **GHG – Greenhouse Gases-non biogenic**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **120,226** lb/hour **97,557** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **165.6 lb/MMBtu** Reference: **EPA's Mandatory Reporting Rule, Tables C-1 and C-2**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): **36,974** tons/year	8.b. Baseline 24-month Period: From: **06/2008** To: **05/2010**
9.a. Projected Actual Emissions (if required): **44,043** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Maximum heat input due to No. 6 fuel oil = 4,840 gal/hr x 150,000 Btu/gal
= 726 MMBtu/hr

Hourly: 165.6 lb/MMBtu x 726 MMBtu/hr = 120,226 lb/hr

Annual: 1,178,220 MMBtu/hr x 165.6 lb/MMBtu x 1 ton/2,000 lb = 97,556.61 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

Potential emissions based on No. 6 fuel oil only. Biogenic CO_2 emissions from BLS combustion are excluded per US EPA biomass deferral dated July 1, 2011.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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):	

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):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO_2e**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **120,589** lb/hour **97,851** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **166.1 lb/MMBtu** Reference: **EPA's Mandatory Reporting Rule, Tables C-1 and C-2**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): **55,930** tons/year	8.b. Baseline 24-month Period: From: **06/2008** To: **05/2010**
9.a. Projected Actual Emissions (if required): **66,811** tons/year	9.b. Projected Monitoring Period: ☒ 5 years ☐ 10 years

10. Calculation of Emissions:

Maximum heat input due to No. 6 fuel oil = 4,840 gal/hr x 150,000 Btu/gal = 726 MMBtu/hr

Hourly: 166.1 lb/MMBtu x 726 MMBtu/hr = 120,589 lb/hr

Annual: 1,178,220 MMBtu/yr x 166.1 lb/MMBtu x 1 ton/2,000 lb = 97,851.1 TPY

11. Potential, Fugitive, and Actual Emissions Comment:

Potential emissions based on No. 6 fuel oil only. Biogenic CO_2 emissions from BLS combustion are excluded per US EPA biomass deferral dated July 1, 2011.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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):	

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):	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G 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: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9 (6-minute average)**	
5. Visible Emissions Comment: **40 CFR Part 63, Subpart MM, and Permit No. 1070005-038-AC.**	

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:	

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 6

1. Parameter Code: **EM**	2. Pollutant(s): **TRS**
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **43C**	Serial Number: **67324-356**
5. Installation Date:	6. Performance Specification Test Date: **2/20/2001**
7. Continuous Monitor Comment: **Rule 62-296.404(5), F.A.C.**	

Continuous Monitoring System: Continuous Monitor 2 of 6

1. Parameter Code: **EM**	2. Pollutant(s): **CO**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **TEI** Model Number: **Thermo 48C**	Serial Number: **330102710**
5. Installation Date:	6. Performance Specification Test Date: **4/4/2008**
7. Continuous Monitor Comment: **Permit No. 1070005-038-AC.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor **3** of **6**

1. Parameter Code: **EM**	2. Pollutant(s): **SO2**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **TEI** Model Number: **Thermo 43C**	Serial Number: **67563357**
5. Installation Date:	6. Performance Specification Test Date: **4/4/2008**
7. Continuous Monitor Comment: **Permit No. 1070005-050-AC.**	

Continuous Monitoring System: Continuous Monitor **4** of **6**

1. Parameter Code: **EM**	2. Pollutant(s): **NOx**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **TEI** Model Number: **Thermo 42I**	Serial Number: **723424630**
5. Installation Date:	6. Performance Specification Test Date: **4/4/2008**
7. Continuous Monitor Comment: **Permit No. 1070005-038-AC.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor **5** of **6**

1. Parameter Code: **VE**	2. Pollutant(s):
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **Thermo Environmental** Model Number: **Model 440**	Serial Number: **440A75673B13380**
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **40 CFR Part 63, Subpart MM; Rule 62-212.400 (BACT); and Permit No. 1070005-038-AC.**	

Continuous Monitoring System: Continuous Monitor **6** of **6**

1. Parameter Code: **O2**	2. Pollutant(s):
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **Citi Technologies** Model Number: **2FO**	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Rule 62-296.404(5)(b), F.A.C.**	

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)
   ☒ Attached, Document ID: **GP-EU1-I1** ☐ 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: **GP-EU1-I2** ☐ 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: **GP-EU1-I3** ☐ 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 _____
   ☒ 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: **GP-EU1-I5** ☐ Previously Submitted, Date _____
   ☐ 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

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) 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 (Rules 62-212.400(4)(d) and 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

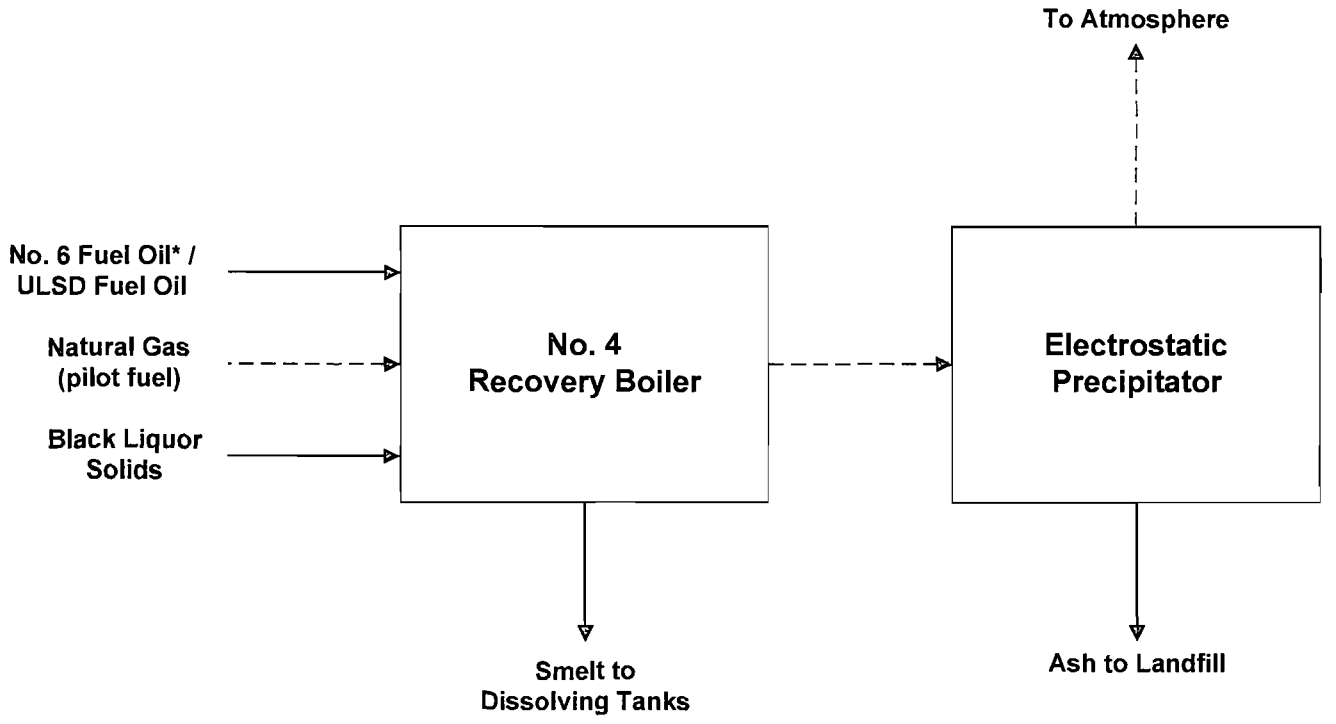
Additional Requirements for Title V Air Operation Permit Applications

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

Additional Requirements Comment

ATTACHMENT GP-EU1-I1

PROCESS FLOW DIAGRAM



* Can include On-spec Used Oil.

Attachment GP-EU1-I1
No. 4 Recovery Boiler
Process Flow Diagram

Process Flow Legend
Solid/Liquid ——→
Gas - - - -→

Golder Associates

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ATTACHMENT GP-EU1-I2

FUEL ANALYSIS OR SPECIFICATION

ATTACHMENT GP-EU1-I2

FUEL ANALYSIS
NO. 4 RECOVERY BOILER

Fuel	Density (lb/gal)	Moisture (%)	Weight % Sulfur	Weight % Ash	Heat Capacity
No. 6 Fuel Oil [a]	8.33	--	2.35	0.15	145,000–150,000 Btu/gal
Black Liquor Solids	11.3	35	--	--	6,084 Btu/lb
Ultra Low-sulfur Diesel Oil	7.33	--	0.0015	--	140,161 Btu/gal

Note: This unit is equipped with a continuous natural gas pilot system.

[a] Fuel oil may include on-spec used oil.

ATTACHMENT GP-EU1-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

ATTACHMENT GP-EU1-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT NO. 4 RECOVERY BOILER

The No. 4 Recovery Boiler is equipped with an electrostatic precipitator for particulate matter control.

Manufacturer	Environmental Elements Corp.
Inlet Gas Temp (°F)	410
Gas Flowrate (acfm)	540,000
Primary Voltage (volts)	0-600
Secondary Voltage (kvolts-dc)	0-80
Primary Current (amps)	0-300
Secondary Current (amps)	0-1.500
Control Efficiency (%)	99.75

ATTACHMENT GP-EU1-I5

OPERATION AND MAINTENANCE PLAN

ATTACHMENT GP-EU1-I5

OPERATION AND MAINTENANCE PLAN NO. 4 RECOVERY BOILER

OPERATIONS and MAINTENANCE

There are various Recovery Boiler operational events that could potentially lead to excess emissions. These events are caused by various malfunctions such as safety interlocks, process alarms, and equipment failures.

For typical and anticipated events, the Palatka Mill has determined the appropriate responses to correct malfunctions as soon as practicable. The mill employs trained maintenance workers who can repair mechanical and electrical problems. The mill also maintains supplies of spare parts deemed necessary to effect good, continuous operation.

During the period required to correct a malfunction while the process continues to operate, the Palatka Mill will limit emissions following practices designed to minimize emissions. Depending upon the scope of the malfunction, a complete process shutdown may be required.