

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0224-AOP-R26 AFIN: 15-00001

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Green Bay Packaging Inc. - Arkansas Kraft Division
338 Highway 113 South
Morrilton, Arkansas 72110

3. PERMIT WRITER:

Derrick Brown

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Paperboard Mills
NAICS Code: 322130

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
8/27/2024	Minor Modification	Replacement of Emergency Engine SN-47

6. REVIEWER'S NOTES:

Green Bay Packaging, Inc.-Arkansas Kraft Division (AKD) of 338 Highway 113, Morrilton, Conway County, Arkansas 72110 has owned and operated a fully integrated kraft pulp and paper mill in Oppelo, near Morrilton, since 1965. This modification replaces an existing 9.2 HP Diesel Emergency Engine with a new 9.1 HP Diesel Emergency Engine. The facility will use the same source number SN-47. This modification will not increase permitted emissions for the facility.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no pending enforcement actions for this facility.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N/A

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-04, SN-15, SN-46, SN-401, SN-601	PM, NO _x , CO	NSPS Db
SN-23 (#5 Digester Only)	PM, TRS	NSPS BB
Facility	Asbestos	NESHAP M
Facility	HAPs	MACT S
SN-05A, SN-07, SN-08, 301 401, 501	PM, TRS	MACT MM
SN-39, 304	HAPs	MACT RR
SN-07, 301, 302, 303, 401, 501, 601	PM TRS	NSPS BBa
SN-41, SN-42, SN-43, SN-44, 47, 610, 611, 902A-F	HAPs	NESHAP ZZZZ
SN-45	HAPs	NSPS JJJJ
SN-04, SN-15, SN-46, 601	PM, CO, NO _x , HAPs	NESHAP DDDDD
SN-47, 610, 611, 902A-F	Criteria	NSPS IIII

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
301	SO ₂	Precontrol below 100
401	PM ₁₀	Post 90 NSPS or NESHAP
501	PM ₁₀	Post 90 NSPS or NESHAP
501	PM ₁₀	Precontrol below 100
507	PM ₁₀	Inherent Process Equipment
508	PM ₁₀	Inherent Process Equipment
509	PM ₁₀	Inherent Process Equipment
601	PM ₁₀	Precontrol below 100
602	PM ₁₀	Inherent Process Equipment
603	PM ₁₀	Inherent Process Equipment
702	PM ₁₀	Inherent Process Equipment
703	PM ₁₀	Inherent Process Equipment
46	NO _x	Post 90 NSPS or NESHAP

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of non-criteria pollutants are below thresholds of concern.

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards Yes

If exempt, explain: facility instituting control technology as allowed under 8-3-103(d)

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H ₂ S	20 parts per million (5-minute average*)		
	80 parts per billion (8-hour average) residential area		
	100 parts per billion (8-hour average) nonresidential area		

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
04	Test Data/NCASI	lb/lb steam $PM_{10}: 9.79 \times 10^{-5} * 1.2$ $PM: 8.93 \times 10^{-5} * 1.2$ $VOC: 2.52 \times 10^{-5} * 1.2$ $CO: 2.47 \times 10^{-4} * 1.2$ $SO_2: 1.65 \times 10^{-5} * 1.2$ <u>lb/MMBtu</u> $NO_x: 2.03E-01 * 1.2$	Multiclones Wet Scrubber		
05A	Test/CEMs Data/NCASI TB 1050, Table 4.52 & Table 4.53 & Table 4.54	lb/T BLS $PM: 0.260 * 1.2$ $PM_{10}: 0.199 * 1.2$ $SO_2: 0.393 * 1.2$ $VOC: 0.041 * 1.2$ $CO: 2.36 * 1.2$ $NO_x: 1.130 * 1.2$ $Lead: 1.2 \times 10^{-5} * 1.2$ $TRS: 0.0257 * 1.2$ $H_2S: 1.62 \times 10^{-2} * 1.2$	ESP	99.8%	401,400 TBLS annually
07	Test Data NCASI TB 1020, Table 4.15 NCASI TB 1050, Table 4.63 and 4.62	<u>lb/T BLS:</u> $PM: 0.114 * 1.2$ $PM_{10}: 0.1319 * 1.2$ <u>lb/T BLS</u> $SO_2: 6.0 \times 10^{-3} * 1.2$ $VOC: 1.0 \times 10^{-1}$ $CO: 8.0 \times 10^{-3} * 1.2$ <u>lb/T BLS:</u> $Lead: 7.64 \times 10^{-7} * 1.2$ $TRS: 1.87 \times 10^{-2} * 1.2$ $H_2S: 1.18 \times 10^{-2} * 1.2$	Venturi Scrubber		401,400 T BLS annually
08	Stack Test NCASI TB 1020, Table 4.13, NCASI TB 1050 4.56, and 4.59	lb/T CaO $PM: 0.76 * 1.2$ $PM_{10}: 1.26 * 1.2$ $PM_{2.5}: 0.402 * 1.2$ $SO_2: 2.49 \times 10^{-2} * 1.2$ $VOC: 4.32 \times 10^{-2}$ $CO: 6.0 \times 10^{-2} * 1.2$ $NO_x: 0.7 * 1.2$	High Efficiency Scrubber		

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
		Lead: $1.54 \times 10^{-4} * 1.2$ TRS: 40 ppm hourly (CEMS) TRS: 20 ppm annually (CEMS) H_2S : $5.64 \times 10^{-2} * 1.2$			
11	Emissions routed to SN-04	HVLC Collection System			
12	NCASI	<u>lb/ODTP</u> Acetaldehyde: 0.05 Methanol: 0.42 Total HAPS 0.47 VOC: 0.47 H_2S : 0.08 <u>Percent Volatilized (H_2S)</u> Primary Clarifier: 1.4% Aerated Stabilization Basin: 8.8%	None		Total HAP and VOC emissions are calculated as the sum of the methanol and acetaldehyde
15	AP-42 PSD BACT Limit established in R0	PM/PM ₁₀ : $7.6 \text{ lb}/10^6 \text{ ft}^3 \text{ gas}$ VOC: $5.5 \text{ lb}/10^6 \text{ ft}^3 \text{ gas}$ CO: $84 \text{ lb}/10^6 \text{ ft}^3 \text{ gas}$ SO ₂ : $0.6 \text{ lb}/10^6 \text{ ft}^3 \text{ gas}$ NO _x : 0.067 lb/MMBtu	FGR		
17	NCASI TB 1020, Table 4.1 & NCASI TB 1050, Table 4.65 and 4.66	lb/T TO VOC: 2.90 Acetaldehyde: $2.42 \times 10^{-3} * 1.2$ Acetone: $2.60 \times 10^{-2} * 1.2$ Acrolein: $1.64 \times 10^{-3} * 1.2$ Methanol: 9.33×10^{-2}	None		

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
		*1.2 TRS: $5.87 \times 10^{-2} * 1.2$ H ₂ S: $2.83 \times 10^{-2} * 1.2$			
22	Testing	SO ₂ : 10.92 lb/MMBtu	None		
	NCASI TB 1020, Table 4.4 & NCASI TB 1050, Table 4.35, & Table 4.36	lb/ADTUBP PM: $0.036 * 1.2$ VOC: 0.008 CO: $0.012 * 1.2$ NO _x : $0.047 * 1.2$ TRS: $4.55 \times 10^{-4} * 1.2$ Acetaldehyde: $4.08 \times 10^{-4} * 1.2$ Acetone: $2.85 \times 10^{-4} * 1.2$ Formaldehyde: $7.92 \times 10^{-5} * 1.2$ Methanol: $3.45 \times 10^{-3} * 1.2$			
23	NCASI TB 1020, Table 4.2, NCASI TB 1050, Table 4.30 & Table 4.31	lb/ODT (tons of oven dried chips) VOC: $1.2 \times 10^{-2} * 1.2$ TRS: $6.3 \times 10^{-4} * 1.2$ Acetaldehyde: $2.8 \times 10^{-4} * 1.2$ Acetone: $3.65 \times 10^{-4} * 1.2$ Methanol $4.75 \times 10^{-3} * 1.2$	None		
24	NCASI TB 1020 Table 9.1 ADEQ MEMO AP-42 NCASI TB 723 Table 4	<u>Chip Cyclone</u> PM/PM ₁₀ : 0.003 lbs/BDT <u>Truck Unloading lb/ton Wood Waste/Bark</u> PM: 4.4×10^{-3} PM ₁₀ : 3.4×10^{-4} <u>Truck Unloading lb/ton Chips</u> PM: 0.0008 PM ₁₀ : 0.00008	None		360,000 ADTFP/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
		<u>Storage Pile lb/day-acre</u> Wood Waste/Bark PM: 1.34×10^{-3} PM: 6.68×10^{-4} <u>Chips</u> PM: 1.04×10^{-4} PM: 5.2×10^{-5} Chip Acres: 7 Bark Acres: 5 <u>Emissions from Chip Piles</u> VOC _{active} : 60.78 lb/hr VOC _{inactive} : 3.67 lb/hr <u>Emissions from Bark Piles</u> VOC: 2.73 lb/Tdw			
					VOC _{active} = $[0.323 \text{ mg CH}_4/\text{m}^2/\text{sec} * (\text{surface area}) \text{ m}^2 * 2.2046\text{E-}06 \text{ lb/mg} * (3600 * 24 * 365) \text{ sec/yr} * (1/2000) \text{ ton/lb}]$ VOC _{inactive} = $[0.013 \text{ mg CH}_4/\text{m}^2/\text{sec} * (\text{surface area}) \text{ m}^2 * 2.2046\text{E-}06 \text{ lb/mg} * (3600 * 24 * 365) \text{ sec/yr} * (1/2000) \text{ ton/lb}]$ Surface area of active pile:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
					11,331.3m ² Surface area of inactive pile: 16,997.0 m ²
25A	NCASI TB 942, Table 5.2, Mill D NCASI TB 973, Table A16a, Mill PMMH NCASI TB 1050, Table A16a	<u>lb/ADTFP</u> PM: 0.020*1.2 PM ₁₀ : 0.06*1.2 VOC = 1.61 Acetone: 3.4x10 ⁻² *1.2 Acetaldehyde: 1.8x10 ⁻¹ *1.2 Acrolein: 6.9x10 ⁻³ *1.2 Formaldehyde: 1.35x10 ⁻² *1.2 Methanol: 9.2x10 ⁻¹ *1.2	None		360,000 ADTFP/yr
25B	NCASI TB 942, Table 5.2, Mill D NCASI TB 1050	<u>lb/ADTFP</u> PM: 0.020*1.2 PM ₁₀ : 0.06*1.2 VOC = 1.61 Acetone: 3.4x10 ⁻² *1.2 Acetaldehyde: 1.8x10 ⁻¹ *1.2 Acrolein: 6.9x10 ⁻³ *1.2 Formaldehyde: 1.35x10 ⁻² *1.2 Methanol: 9.2x10 ⁻¹ *1.2	None		270,000 ADTFP/yr
26 27	AP-42 Section 1.4 Tables 1.4-1 and 1.4-2	lb/10 ⁶ scf PM: 7.6 PM ₁₀ : 7.6 SO ₂ : 0.6 NO _x : 100 CO: 84 VOC: 5.5 Formaldehyde: 0.075	None		
30	LandGEM v 3.02 AP-42 Section	VOC: 37.42 tpy CO: 2.9 tpy Acetone: 0.20 tpy	None		

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
	13.2.4	Total HAPs: 9.92 tpy PM: 0.00108 lb/ton PM ₁₀ : 0.00051 lb/ton			
31	NCASI TB 1020, table 4.3, NCASI TB 1050, Table 4.37 and 4.38	<u>lb/hr/tank</u> VOC: $5.40 \times 10^{-1} * 1.2$ TRS: $2.06 \times 10^{-1} * 1.2$ H ₂ S: $3.28 \times 10^{-3} * 1.2$ Acetaldehyde: $5.06 \times 10^{-4} * 1.2$ Acetone: $1.60 \times 10^{-2} * 1.2$ Acrolein: $1.86 \times 10^{-4} * 1.2$ Formaldehyde: $1.21 \times 10^{-4} * 1.2$ Methanol: $1.16 \times 10^{-1} * 1.2$	None		349,200 ODTP/yr
32	NCASI TB 1020 Table 4.14 NCASI TB 1050, Table 4.43 and 4.44	<u>VOC lb/T CaO</u> VOC: 7.92×10^{-2} <u>Green Liquor Tanks (2)</u> <u>lb/hr/tank</u> Acetone: $1.2 \times 10^{-1} * 1.2$ TRS: $4.37 \times 10^{-2} * 1.2$ Acetaldehyde: $3.1 \times 10^{-2} * 1.2$ Methanol: $3.65 * 1.2$ <u>Green Liquor Clarifiers</u> <u>lb/T CaO</u> Acetone: $1.5 \times 10^{-3} * 1.2$ TRS: $6.2 \times 10^{-4} * 1.2$ Acetaldehyde: $1.0 \times 10^{-4} * 1.2$ Methanol: $0.13 * 1.2$	None		
36	NCASI TB 1020, Table 4.14 NCASI TB, 1050, Table 4.69, Table	Slaker: lb/T CaO Acetaldehyde: $2.89 \times 10^{-2} * 1.2$ Methanol: $3.49 \times 10^{-1} * 1.2$ Ammonia: $2.99 \times 10^{-1} * 1.2$ VOC: $4.10 \times 10^{-2} * 1.2$	None		

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
	4.70, & Table 4.71	TRS: $8.78 \times 10^{-2} * 1.2$ Causticizer: lb/T CaO Acetaldehyde: $9.6 \times 10^{-4} * 1.2$ Acrolein: $1.70 \times 10^{-5} * 1.2$ Formaldehyde: $1.75 \times 10^{-5} * 1.2$ Methanol: $5.5 \times 10^{-4} * 1.2$ Ammonia: $0.126 * 1.2$ VOC: $8.30 \times 10^{-4} * 1.2$ TRS: $5.55 \times 10^{-2} * 1.2$			
37	NCASI TB 1020, Table 4.2 NCASI TB 849, Table B-4, IV.B NCASI TB 1050 Table 4.28	lb/ADTUBP VOC: $0.71 * 1.2$ TRS: $0.11 * 1.2$ Acetone: $3.0 \times 10^{-2} * 1.2$ Acetaldehyde: $7.60 \times 10^{-3} * 1.2$ Acrolein: $4.74 \times 10^{-3} * 1.2$ Formaldehyde: $5.40 \times 10^{-3} * 1.2$ Methanol: $0.075 * 1.2$	#2 Lime Kiln NCG Flare		
38	NCASI TB 1020, Table 4.6 NCASI TB 1050, Table D5, and Table 4.34	lb/ADTUBP VOC: 6.78×10^{-1} TRS: $0.185 * 1.2$ Acetone: $4.2 \times 10^{-2} * 1.2$ Acetaldehyde: $1.4 \times 10^{-3} * 1.2$ Methanol: $0.350 * 1.2$	#3 WW Boiler #4 Package Boiler		
39	Emissions Routed to SN-04	HVLC Collection System			
40	AP-42 Chap. 13.2.1 & 13.2.2	<u>Unpaved</u> PM ₁₀ : 1.93 lb/VMT (Daily Max) PM ₁₀ : 1.375 lb/VMT (Annual) PM: 7.24 lb/VMT (Daily Max) PM: 5.159 lb/VMT			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
		(Annual) <u>Paved</u> PM ₁₀ : 0.08 lb/VMT (Daily Max) PM ₁₀ : 0.08 lb/VMT (Annual) PM: 0.42 lb/VMT (Daily Max) PM: 0.39 lb/VMT (Annual)			
41 42 43 44	AP-42 Table 3.3-1, 3.3-2	<u>lb/hp-hr</u> NOx: 0.031 CO: 6.68 x10 ⁻³ SO ₂ : 2.05 x10 ⁻³ PM/PM ₁₀ : 2.2 x10 ⁻³ VOC: 2.51 x10 ⁻³ Acetaldehyde: 7.67x10 ⁻⁴ Formaldehyde: 1.18x10 ⁻³	None		500 hr/yr each
45	AP-42 Table 3.2-3	<u>lb/MMBtu</u> NOx: 2.21 CO: 3.72 SO ₂ : 5.88x10 ⁻⁴ PM ₁₀ : 1.86x10 ⁻² PM: 9.5x10 ⁻³ VOC: 2.96x10 ⁻² Acetaldehyde: 2.79x10 ⁻³ Acrolein: 2.63x10 ⁻³ Formaldehyde: 2.05x10 ⁻² Methanol: 3.06x10 ⁻³			
46	Vendor AP-42, Table 1.4-2, 1.4-3, 1.4-4	Natural Gas Combustion <u>lb/MMBtu</u> VOC: 0.0066 PM: 0.005 PM ₁₀ : 0.005 SO ₂ : 0.0012 CO: 0.048 NOx: 0.0326			Natural Gas Emission factors includes the vendor guarantee

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
		Lead: 5.0×10^{-4} lb/MMscf HVLC Combustion SO ₂ : 0.6467 lb/ADTUBP			
47	AP-42 Table 3.3-1 3.3-2 NSPS IIII	<u>lb/hp-hr</u> SO ₂ : 2.05×10^{-3} VOC: 2.51×10^{-3} Acetaldehyde: 7.67×10^{-4} Formaldehyde: 1.18×10^{-3} <u>g/hp-hr</u> NO _x : 5.6 CO: 6.0 PM/PM ₁₀ : 0.3			
48	NCASI TB 1020, Table 4.3 NCASI TB 1050, Table 4.45 and 4.46	<u>lb/hr/tank</u> VOC: 4.84×1.2 TRS: $5.33 \times 10^{-1} \times 1.2$ Acetaldehyde: $5.20 \times 10^{-3} \times 1.2$ Acetone: $8.45 \times 10^{-3} \times 1.2$ H ₂ S: $1.13 \times 10^{-2} \times 1.2$ Methanol: $2.40 \times 10^{-1} \times 1.2$			
49	NCASI TB 1020, Table 4.3, NCASI TB 1050 Table 4.39 and 4.40	<u>lb/hr/tank</u> TRS: $7.43 \times 10^{-2} \times 1.2$ VOC: $2.88 \times 10^{-1} \times 1.2$ Acetaldehyde: $2.02 \times 10^{-2} \times 1.2$ Acetone: $2.80 \times 10^{-2} \times 1.2$ Acrolein: $1.78 \times 10^{-5} \times 1.2$ Formaldehyde: $5.0 \times 10^{-4} \times 1.2$ Methanol: 0.130×1.2			
50	NCASI TB 1020, table 4.14 and TB 1050,	<u>lb/T CaO</u> VOC: 8.18×10^{-2} <u>Precoat Filter</u>			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
	Table 4.73, and Table 4.74	Acetaldehyde: $1.99 \times 10^{-3} * 1.2$ Acrolein: $5.32 \times 10^{-5} * 1.2$ Formaldehyde: $2.0 \times 10^{-4} * 1.2$ Methanol: $1.12 \times 10^{-2} * 1.2$ <u>Precoat Filter Vacuum Pump Exhaust</u> Acetaldehyde: $7.6 \times 10^{-3} * 1.2$ Methanol: $3.5 \times 10^{-2} * 1.2$			
51	NCASI TB 1050, Table 4.41 and 4.42	<u>lb/hr/tank</u> TRS: $1.93 \times 10^{-4} * 1.2$ VOC: 5.2×10^{-2} Acetone: $1.00 \times 10^{-2} * 1.2$ H ₂ S: $9.19 \times 10^{-3} * 1.2$ Methanol: $3.10 \times 10^{-2} * 1.2$			
52	NCASI TB 1050, Table 4.75	<u>lb/T CaO</u> VOC: 9.10×10^{-2} Acetaldehyde: $3.60 \times 10^{-4} * 1.2$ Methanol: $9.84 \times 10^{-3} * 1.2$			
53	NCASI TB 1020, Table 4.16 and NCASI TB 1050, Table 4.88	<u>lb/T BLS</u> Acetaldehyde: $1.07 \times 10^{-4} * 1.2$ Acrolein: $6.04 \times 10^{-6} * 1.2$ Formaldehyde: $9.50 \times 10^{-6} * 1.2$ Methanol: $9.80 \times 10^{-4} * 1.2$ VOC: 2.74×10^{-3}			
101	<u>BACT NCASI SR-15-01 Table 6.1</u> NCASI TB	PM ₁₀ (lb/T) PM _{2.5} - 4.5E-04	None		

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)		Control Equip.	Control Equip. Eff	Comments
	1020 NCASI TB 723, Table 4	-	1.2E-03 2.2E-04 - 1.6E-04 2.8E-05 VOC equation			
102 103	NCASI memo from Zach Emerson - "PM2.5 Emissions from Drum Debarking - July 2014 Update", average value with a 20% safety factor applied. 19% of PM assumed to be PM2.5; assumed PM = PM10	PM 2.84E-04 PM ₁₀ 2.84E-04 PM _{2.5} 5.40E-05		None		
301	NCASI Bulletin 1020, Table 4.4, median value GHG from Part 98 HAPs NCASI Bulletin 1050, Table 4.35	PM(all) SO2 VOC CO NOx HAPs	0.043 0.054 0.008 0.014 0.056 See Application	This source is an incinerator controlling other sources. Wet Scrubber	Not specified	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
302	VOC: NCASI Bulletin 1020, Table 4.2	9.42E-01 lb/ADTUBP			
	HAPs/Acetone: NCASI Bulletin 1050, Table 4.28	Many See Applicaton.			
	H ₂ S,TRS: NCASI Bulletin 1050, Table 4.29	H ₂ S 2.64E-01 lb/ADTUBP TRS 1.51E+00 lb/ADTUBP			
303	VOC: NCASI Bulletin 1020, Table 4.2, 4.3, 4.5, 4.6, and 4.7	8 different sources combined see application			
	HAPs: Bulletin 1020, Table 4.5	Many See Application			
	H ₂ S,TRS: NCASI Bulletin 1050, Table 4.29	H ₂ S 9.43E-03 TRS 2.22E-01			
401	BACT	Varied see listed in Section 6 above.	ESP		
501	No. 3 Lime Kiln	Varied see listed in Section 6 above.	ESP		
502 A	No. 3 Lime Slaker and Causticizers	PM(All) 3.48E-02 VOC Slaker 4.92E-02 VOC Caust. 9.96E-04	Wet Scrubber		
503	NCASI Bulletin 1020, Table 4.14	VOC 7.92E-02 lb/ton TRS 5.24E-02 lb/hr/tank			
504	NCASI Bulletin 1020, Table 4.14	VOC 7.92E-02 lb/ton			
505	NCASI Bulletin 1020, Table 4.14	9.00E-03 lb/ton 2.32E-04 lb/hr/tank			
506	NCASI Bulletin 1020, Table 4.14	4.80E-03 lb/ton 5.18E-02 lb/ton			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff	Comments
507 508	BACT	0.012 gr/dscf	Fabric Filter		
509	BACT	0.012 gr/dscf	Fabric Filter		
601	BACT	Varied see listed in Section 6 above.	Baghouse SNCR WFDS or DFDS		
602	BACT	0.012 gr/dscf	Fabric Filter		
603	BACT	0.012 gr/dscf	Fabric Filter		
610 611 902 A-F	BACT	Varied see listed in Section 6 above.			
612 613	AP-42 Chapter 7.1	Equations			
701	BACT	Varied see listed in Section 6 above.			
702 703	BACT	0.012 gr/dscf			
901	VOC: NCASI TB 1020, Table 7.2	1.38E-02 lb/ADTFP			
	HAPS NCASI TB 1050, Table 9.5	Too many to list see application			
903 904	3-Cell Cooling Tower	1500 TDS 0.005% Drift Rate	Mist Eliminator		
990	Post-Scion Mill Roads	Equation	Dust Suppressant		

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
04	PM ₁₀ VOC SO ₂ CO	202 or 5 25A 6C 10	Every 5 years	Verify emissions
04	HCL Mercury PM or TSM CO O ₂	26 or 26A 29, 30A, 30B, or 101A 5 or 17 29 10 3A or 3B	Annual	40 CFR 63 Subpart DDDDD
05A	PM ₁₀ VOC SO ₂ CO NO _x	201 or 201A, 202 25A 6C 10 7E	Every 5 Years	Verify emissions
	PM	5 or 29	No later than October 13, 2020 and every 5 years thereafter	40 CFR 63 Subpart MM
07	PM PM ₁₀	202 and 5	Every 5 years	Verify emissions
	PM	5 or 29	No later than October 13, 2020 and every 5 years thereafter	40 CFR 63 Subpart MM
	TRS	16	No later than December 31, 2016 and every 5 years thereafter	§19.804(B)
08	PM	5 or 29	Initial	40 CFR 63 Subpart MM
	PM	5 or 29	No later than October 13, 2020 and every 5 years	40 CFR 63 Subpart MM

SN	Pollutants	Test Method	Test Interval	Justification
			thereafter	
39	HAP conc.	Collection 305	Initial	40 CFR 63, Subpart S
41	CO	As listed in Table 4 Item 3 of Subpart ZZZZ	Initial	40 CFR 63 Subpart ZZZZ
41, 42, 43, 44, & 47	Opacity	Method 9	Annual	Verify Emissions
46	CO NO _x	10 7E	Every 5 years	Verify Emissions
401	PM _{2.5} PM ₁₀ SO ₂ VOC CO NO _x	201A 201A 6C 18 7E 10	Initial every then 12 months. Extendable to 60 months.	Verify Emissions
401	Methanol	308 or approved	Initial	Verify Emissions
501	PM _{2.5} PM ₁₀ SO ₂ VOC CO NO _x	201A 201A 6C 18 7E 10	Initial every then 12 months. Extendable to 60 months.	Verify Emissions
502A	TRS	16, 16A, 16B or approved	Initial every then 12 months. Extendable to 60 months.	Verify Emissions
601	PM	5	Initial	Db/limit verification
	Fuel Analysis or testing	Mercury, HCl, TSM	Initial	DDDDD limit

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
04	Liquid flow to the	CPMS	Hourly or continuously, reduced to 3-hr rolling	N

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
	scrubber		average	
04	Pressure drop across scrubber	CPMS	Hourly or continuously, reduced to 3-hr rolling average	N
04	CO and oxygen or CO ₂	Oxygen analyzer	Continuously	Y
04	NO _x CO ₂	CEMS	Continuously	Y
05A	TRS O ₂	TRS Monitor (Perf. Spec. #5), H ₂ S on dry basis, corrected to 8% O ₂ O ₂ Monitor (Perf. Spec. #3)	Continuously TRS reduced to 12-hr average	N
05A	Opacity	COMS	Continuously	N
07	Pressure drop and Flow	CPMS	Continuously, but reduced to 12-hr block averages	N
08	TRS emission rate O ₂	H ₂ S on dry basis	12 hour average	N
08	Pressure drop across scrubber	CPMS	Hourly or continuously	N
08	Liquid flow to the scrubber	CPMS	Hourly or continuously	N
22	Temperature Hours of Operation			
15	NO _x	CEM	Continuously	N
23	Temperature of gases from the #5 batch digester to be incinerated	Temperature CEM accurate within 1% of the temperature being measured	Continuously	N
37 38 39	Negative pressure Leak detection	Anemometer, smoke tubes Part 60, Method 21	Annual	N
39	Condensate flow Pulp flow Pulp consistency	Flow meter or mass balance Consistency meter	Continuous	N
46	NO _x O ₂	CEM	Continuous	Y
301	Temperature	Temperature	Continuous	Y
401	TRS, O ₂	CEM	Continuous	Y

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
501	TRS, O ₂	CEM	Continuous	Y
502A	Scrubber Flow Rate	Flow Meter	Daily	Y
501	TRS, NO _x , O ₂	CEM	Continuous	Y
601	Optional CO, PM, HCl	CEMS	Continuous/optional	Y
903, 904	TDS	Sample	Monthly	Y

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
04	Steam throughput	270,000 lb/hr 2,100,000,000 lb/12 months	Monthly	Y
	Fuel combusted each day	Cellulosic Biomass, clean cellulosic biomass, natural gas and/or other approve fuel	Monthly	Y
	Opacity	20%		
	Mercury PM TSM CO	Heat Input / Steam Output Lb/MMBTU 5.70E-06/ 6.40E-06 0.44/0.55 4.50E-4/5.7E-4 3,500ppm/3.5	Monthly	Y
	Tune-up	-	Annually	Y
	Energy Assessment	-	Initial	Y
	Fuel Analyses	-	Monthly	Y
	Type and amount of all fuels burned	-		Y
05A	Black liquor throughput	401,400 tons/12 months	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	Fuel Type	Black liquor solids Natural gas	Monthly	Y
07	Black liquor throughput	401,400 tons/12 months	Monthly	Y
	Pressure drop and scrubbing liquid flow rate	To be established during initial performance test	Continuously, but reduced to 12-hr block averages	N
	Excess emissions based on pressure drop and scrubbing liquid flow rate	All 12-hr block averages below minimum liquid flow and pressure drop	As necessary and reported semiannually	Y
	Occurrence and duration of each malfunction and any action taken to minimize emissions in accordance with §60.11(d)	See Specific Condition 102	As necessary and reported semiannually	Y
08 32	Lime throughput	84,950 tons/12 months	Monthly	Y
12	Pulp throughput (oven dried)	349,200 tons/12 months	Monthly	Y
15	Fuel Combusted/Capacity Factor		Daily/Quarterly	Y
	NOx	0.067 lb/MMBtu	Monthly	Y
17	Production or process of Tall Oil	15,012 tons/12 months	Monthly	Y
22	Hours of operation	1000 hours/12 months	Daily	Y
	Minimum Temperature	1200°F	Daily	Y
25A	Production rate of finished paper	360,000 air dried tons/year	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
25B	Production rate of finished paper	270,000 air dried tons/year	Monthly	Y
30	Annual uncompacted waste acceptance rate	489,000 yd ³ /hr	Monthly	Y
31	Pulp throughput (oven dried)	349,200 tons/12 months	Monthly	Y
36	Lime throughput	84,950 tons/12 months	Monthly	Y
37	Excess emission releases	Emissions in excess of NESHAP limit of 1%	Semi-annual	Y
	Maintenance Activities	-	As Done	N
	Inspection of LVHC	-	As Done	N
38	Excess emission releases	Emissions in excess of NESHAP limit of 4%	Semi-annual	Y
	Maintenance Activities	-	As Done	N
	Inspection of HVLC	-	As Done	N
39	Mass, flow and consistency of pulp	General recording	Monthly	Y
41	Hours of operation	500 hours per calendar year	Monthly	Y
42, 43, 44, 45	Maintenance	-	As Applicable	N
	Hours of operation	500 hours per calendar year	Monthly	Y
	Hours of operation	Maintenance Check: 100 hours/year Non-emergency: 50 hours/yr	As Needed	N
46	Hours of operation as backup control	2,880 hours/yr	As used On a hourly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	device for SN-38		basis	
	Fuel Combusted/Capacity Factor		Daily/Quarterly	Y
	NOx	0.2 lb/MMBtu	Monthly	Y
47	Hours of operation	500 hours per calendar year	Monthly	Y
	Hours of operation	Maintenance Check: 100 hours/year Non-emergency: 50 hours/yr	As Needed	N
101	Throughput	2,956,950 tons/12 months	Monthly	Y
401	Throughput	821,250 tons/12-months	Monthly	Y
	Startup notification for Db	None	Once	Y
501	Throughput	121,180 tons/12-months	Monthly	Y
601	Annual capacity for Natural Gas	30%	Monthly	Y
601	DDDDD and Db Records	None	As needed	Y
610, 611, 902A-F	Hours	500 hr per year	Monthly	Y
610, 611, 902A-F	III Records	None	As needed	Y
701	Production	865,050 ADTPH/12 mo.	Daily	Y
901	Throughput	438,000 tons/12 mo.	Monthly	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
04	20	(NSPS)	Flow Rate & Pressure Differential
05A	20	Department Guidance	Daily
07	20	NEHSAP Subpart MM	Flow Rate & Pressure Differential

SN	Opacity	Justification for limit	Compliance Mechanism
08	20	Department Guidance	N/A
22	20		
15	5	Department Guidance	Burning natural gas
26, 27	5	Department Guidance	Burning natural gas
41, 42, 43, 44, 47	20	Department Guidance	Annually
45	5	Department Guidance	Burning natural gas
301	5%	Department Guidance/BACT	Burning natural gas
401	5%	Department Guidance/BACT	COMs
501	5%	Department Guidance/BACT	COMs
502A	5%	Department Guidance/BACT	Weekly Opacity Readings
507, 508, 509	5%	Department Guidance/BACT	Weekly Opacity Readings
601	5%	Department Guidance/BACT	COMs
610, 611	20%	Department Guidance/BACT	Annual on backup engines.
602, 603 702, 703	5%	Department Guidance/BACT	Weekly Opacity Readings
701	5%	Department Guidance/BACT	Proper equipment operation

20. DELETED CONDITIONS:

Former SC	Justification for removal
No conditions were deleted with this modification.	

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Pocket Vent System Heater #1 (SN-28)	1	0.23	0.02	0.17	2.52	3.01		0.17
Pocket Vent System Heater #2 (SN-29)	1	0.23	0.02	0.17	2.52	3.01		0.17
A-1 Totals		0.46	0.04	0.34	5.04	6.02		0.34
Used Oil Tank, 1900 gallon tank	3			<0.01				<0.01
Diesel Storage Tank, 288 gallon tank	3			<0.01				<0.01
Diesel Storage Tank, 1061 gallon tank	3			<0.01				<0.01
Diesel Oil Storage Tank, 1943 gallon tank	3			<0.01				<0.01
A-3 Totals				<0.01				<0.01
50% Caustic Storage Tanks	4							

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Recovery Area								
50% Caustic Storage Tanks Tall Oil Area	4							
50% Caustic Storage Tanks Secondary Recovery Area	4							
A-4 Totals								
Main Laboratory Vents	5			0.2				0.2
Test Labs in Process Areas	5			0.2				0.2
A-5 Totals				0.4				0.4
Fly Ash Bunker	13	0.01						
#1 Lime Silos (Sodium Carbonate) (SN-18)	13	0.20						
#2 Lime Silos (Sodium Carbonate) (SN-19)	13	0.20						
Secondary Fiber Plant	13			1.68			0.47	1.50
Turpentine Loading Operation (SN-35)	13			0.07				
Turpentine Storage	13	Sealed System		0.08				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Tank (SN-34)		with no emissions						
Cooling Towers	13	4.0						
Gasoline Storage Tank	13			0.23				0.23
Sludge Press Area – Vent Exhaust	13			0.10			0.10	0.10
Defoamer Tank	13			0.05				0.05
Soda Ash Silos (2)	13	0.02						
A-13 Totals		4.43		2.21			0.47 (max)	1.88

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0224-AOP-R25

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Green Bay Packaging
Permit Number: #0224-AOP-R26
AFIN: 15-00001

\$/ton factor	28.14	Annual Chargeable Emissions (tpy)	8357
Permit Type	Minor Mod	Permit Fee \$	500

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500

Check if Facility Holds an Active Minor Source or Minor Source General Permit ☐

If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$ 0

Total Permit Fee Chargeable Emissions (tpy) 0

Initial Title V Permit Fee Chargeable Emissions (tpy)

HAPs not included in VOC or PM: *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants: *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		813.2	813.2	0		
PM ₁₀		1071	1071	0	0	1071
PM _{2.5}		646.1	646.1	0		
SO ₂		630.8	630.8	0	0	630.8
VOC		3619.8	3619.8	0	0	3619.8
CO		2706.6	2706.6	0		
NO _x		2584.7	2584.7	0	0	2584.7
GHG	☐	2194900	2194900	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Lead	☐	0.17801	0.17801	0		
H2S	☐	38	38	0		
Sulfuric Acid Mist	☒	34.59	34.59	0	0	34.59
TRS	☒	218.68	218.68	0	0	218.68
Acetaldehyde	☐	137.7	137.7	0		
Acrolein	☐	6.37	6.37	0		
Antimony	☐	0.04	0.04	0		
Arsenic	☐	0.08	0.08	0		
Beryllium	☐	0.04	0.04	0		
Biphenyl	☐	12.93	12.93	0		
Cadmium	☐	0.06	0.06	0		
Chromium	☐	0.08	0.08	0		
Chromium IV	☐	0.04	0.04	0		
Cobalt	☐	0.06	0.06	0		
Formaldehyde	☐	30.73	30.73	0		
Hydrochloric Acid	☒	59.4	59.4	0	0	59.4
Hydrogen Fluoride	☒	0.16	0.16	0	0	0.16
Methanol	☐	1393.32	1393.32	0		
Manganese	☐	0.48	0.48	0		
Mercury	☒	0.11	0.11	0	0	0.11
Methelyne Chloride	☒	4.31	4.31	0	0	4.31
Nickel	☐	0.08	0.08	0		
Phosphorus	☐	0.45	0.45	0		
Selenium	☐	0.04	0.04	0		
Total HAPs	☐	2019.04	2019.04	0		
Acetone	☒	51.25	51.25	0	0	51.25
Ammonia	☒	82.2	82.2	0	0	82.2