

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0224-AOP-R27 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:

Shai Sabaroche

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
3/13/2026	Renewal	Added Category A-3 and A-13 insignificant activities; Updated various emissions factors; Corrected inconsistent rounding

6. REVIEWER'S NOTES:

With this renewal, no physical modifications to the facility and no changes to its method of operation are proposed. The Insignificant Activities list has been updated to include additional storage tanks under Categories A-3 and A-13. Consistent with the Non-Criteria Air Pollutant Control Strategy (NCAPCS), Benzene, Phenol, and Tetrachloroethylene are now explicitly permit-limited on a per-source basis, while Antimony, Chromium, and Selenium are no longer explicitly limited per source.

For all sources emitting HAPs, previous “Total Other HAPs” limits have been removed and replaced with speciated HAP limits and consolidated “Total HAPs” limits to ensure consistency. Several pollutant emission factors have been updated and previously omitted non-criteria pollutant limits have been added for multiple sources. Additional revisions include clarifying language updates, corrections to rounding, modernization of regulatory citations, and correction of typographical errors.

Although changes in permitted VOC and H₂S emissions may appear to trigger PSD Review, these changes result solely from updated emission factors (VOC) and correction of typographical errors in prior permit versions (H₂S). Because the facility is undergoing no physical changes and no operational changes, PSD Review is not warranted.

Permitted annual emissions are increased by: 0.6 tpy of PM, 8.6 tpy of PM₁₀, 75.5 tpy of VOC, 21.5 tpy of CO, 0.2 tpy of NO_x, 26.05 tpy of H₂S, 4.05 tpy of TRS, 1.92 tpy of Sulfuric Acid Mist, 1.06 tpy of Acrolein, 0.05 tpy of Arsenic, 3.947077 tpy of Benzene, 0.03 tpy of Beryllium, 2.82 tpy of Biphenyl, 0.05 tpy of Cadmium, 0.02 tpy of Chromium VI, 0.05 tpy of Cobalt, 29.3 tpy of Hydrochloric Acid, 0.07 tpy of Hydrofluoric Acid, 0.16 tpy of Manganese, 0.02 tpy of Mercury, 54.13 tpy of Methanol, 1.86 tpy of Methylene Chloride, 0.06 tpy of Nickel, 13.93 tpy of Phenol, 2.14 tpy of Phosphorus, 6.24 tpy of Tetrachloroethylene, 1.42 tpy of Acetone, and 0.02 tpy of 1,2,4-Trimethylbenzene.

Permitted annual emissions are decreased by: 0.072905 tpy of Lead, 11.92 tpy of Acetaldehyde, 0.25 tpy of Formaldehyde, 182.32 tpy of Total HAPs, and 6.24 tpy of Ammonia.

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.

<https://echo.epa.gov/detailed-facility-report?fid=110000597890>

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.

There are no physical changes proposed in this permit renewal; therefore, PSD review is inappropriate.

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	NESHAP S
SN-05A, SN-07, SN-08, SN-401, SN-501	PM, TRS	NESHAP MM
SN-39, SN-304	HAPs	NESHAP RR
SN-07, SN-301, SN-302, SN-303, SN-401, SN-501, SN-601	PM TRS	NSPS BBa
SN-41, SN-42, SN-43, SN-44, SN-45, SN-47, SN-610, SN-611, SN-902A-F	HAPs	NESHAP ZZZZ
SN-45	Criteria	NSPS JJJJ
SN-04, SN-15, SN-46, SN-601	PM, CO, NO _x , HAPs	NESHAP DDDDD
SN-41, SN-47, SN-610, SN-611, SN-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 8 CAR pt. 40 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:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acetaldehyde	4.5041E+01	4.9545E+00	3.0285E+01	N
Acrolein	1.1464E-01	1.2611E-02	2.4419E+00	N
Antimony	5.0000E-01	5.5000E-02	1.2918E-03	Y
Arsenic	1.0000E-02	1.1000E-03	6.4659E-03	N
Benzene	6.3894E-02	7.0283E-03	1.0855E+00	N
Beryllium	5.0000E-05	5.5000E-06	1.4411E-04	N
Biphenyl	1.2613E+00	1.3875E-01	3.5983E+00	N
Cadmium	2.0000E-03	2.2000E-04	4.3163E-03	N
Chromium	5.0000E-01	5.5000E-02	1.3504E-02	Y
Chromium VI	2.0000E-04	2.2000E-05	3.5073E-03	N
Cobalt	5.0000E-03	5.5000E-04	9.8090E-04	N
Di(2-ethylhexyl) phthalate	1.0000E-01	1.1000E-02	6.5001E-04	Y
Formaldehyde	1.2282E-01	1.3510E-02	7.8273E+00	N
Hexachlorobenzene	2.0000E-03	2.2000E-04	2.3730E-09	Y
Hydrochloric Acid	2.9832E+00	3.2816E-01	2.0293E+01	N
Hydrofluoric Acid	4.0920E-01	4.5012E-02	5.0262E-02	N
Lead	5.0000E-02	5.5000E-03	2.4248E-02	N
Manganese	2.0000E-02	2.2000E-03	1.3106E-01	N
Mercury	1.0000E-02	1.1000E-03	4.4189E-03	N
Methanol	2.6209E+02	2.8829E+01	3.9898E+02	N
Nickel	1.0000E-01	1.1000E-02	1.3835E-02	N
Pentachlorophenol	5.0000E-01	5.5000E-02	4.2346E-04	Y
Phenol	1.9245E+01	2.1170E+00	4.1771E+00	N
Phosphorus	1.0000E-01	1.1000E-02	5.8640E-01	N
Polycyclic Organic Matter	2.0000E-01	2.2000E-02	4.3112E-04	Y
Selenium	2.0000E-01	2.2000E-02	2.4517E-03	Y

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Toluene	7.5370E+01	8.2907E+00	2.6404E+00	Y
Sulfuric Acid Mist	2.0000E-01	2.2000E-02	8.3298E+00	N
Acetone	5.9387E+02	6.5325E+01	2.3410E+01	Y
Ammonia	1.7413E+01	1.9154E+00	1.8070E+01	N

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Acetaldehyde	4.5041E+02	5.4611E+01	Y
Acrolein	1.1464E+00	3.4976E-01	Y
Arsenic	1.0000E-01	8.3300E-04	Y
Benzene	6.3894E-01	8.3699E-01*	Y*
Beryllium	5.0000E-04	9.1782E-06	Y
Biphenyl	1.2613E+01	9.6246E-01	Y
Cadmium	2.0000E-02	3.7500E-04	Y
Chromium VI	2.0000E-03	2.4280E-05	Y
Cobalt	5.0000E-02	7.2877E-05	Y
Formaldehyde	1.2282E+00	1.2100E+00	Y
Hydrochloric Acid	2.9832E+01	1.5681E+00	Y
Hydrofluoric Acid	4.0920E+00	4.7000E-04	Y
Lead	5.0000E-01	2.4900E-04	Y
Manganese	2.0000E-01	1.1313E-01	Y
Mercury	1.0000E-01	4.1200E-04	Y
Methanol	2.6209E+03	4.7993E+02	Y

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Nickel	1.0000E+00	1.2840E-03	Y
Phenol	1.9245E+02	2.0497E+00	Y
Phosphorus	1.0000E+00	6.2250E-03	Y
Sulfuric Acid Mist	2.0000E+00	1.0089E-01	Y
Ammonia	1.7413E+02	6.6862E+01	Y

*Benzene's concentration exceedance occurs over the Arkansas river to the East where no persons do or can reside. Over the offsite domain of health concern, the largest modeled concentration observed is 5.7875E-01 $\mu\text{g}/\text{m}^3$ which is 90.58% of Benzene's presumptively acceptable impact level and thus permissible.

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

Y

If exempt, explain: this facility is classified as a Kraft Pulp Mill subject to and in compliance with 40 C.F.R Part 63, Subpart BB. Pursuant to A.C.A §8-3-103(d)(B)(ii)(b), it is therefore exempt from satisfying H₂S ambient standards.

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
04	Test Data NCASI TB 1020, Table 10.4 NCASI TB 1050, Table 7.1	<u>lb/lb steam</u> PM: 8.93E-05 *1.2PM ₁₀ : 1.04E-04 *1.2 SO ₂ : 1.65E-05 *1.2 VOC: 2.52E-05 *1.2 CO: 2.47E-04 *1.2 <u>lb/MMBtu</u> NO _x : 2.03E-01 *1.2 Lead: 3.09E-05 *1.2 Acetone: 3.82E-04 *1.2	Multiclones Wet Scrubber Low NO _x Burner		Heat Input Capacity: 452 MMBtu/hr Natural Gas Steaming Rate: 270,000 lb steam/hr Total HAPs emission factor is the sum of all considered HAP

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Acetaldehyde: 1.58E-04 *1.2 Acrolein: 1.83E-04 *1.2 Formaldehyde: 4.10E-04 *1.2 Hydrochloric Acid: 2.20E-02 Methanol: 4.85E-04 *1.2 Antimony: 1.47E-06 *1.2 Arsenic: 1.01E-05 *1.2 Beryllium: 7.98E-08 *1.2 Cadmium: 3.09E-06 *1.2 Chromium: 1.00E-05 *1.2 Chromium VI: 2.35E-07 *1.2 Cobalt: 6.11E-07 *1.2 Manganese: 1.27E-04 *1.2 Mercury: 5.70E-06 *1.2 Nickel: 8.84E-06 *1.2 Phosphorus: 9.85E-05 *1.2 Selenium: 1.03E-06 *1.2 Total HAPs: 2.06E-02 *1.2			emissions factors (NCASI 1050 HAP from Wood Fired Boilers with Wet Scrubbers)
05A	Test/CEMs Data NCASI Bulletin 1020, Table 4.12 NCASI TB 1050, Tables 4.52, 4.53, 4.54	<u>lb/T BLS</u> PM: 2.6E-01 *1.2 PM ₁₀ : 2.79E-01 *1.2 SO ₂ : 3.93E-01 *1.2 VOC: 4.1E-02 *1.2 CO: 2.36 *1.2 NO _x : 1.130 *1.2 Lead: 1.2E-05 *1.2 Acetone: 5.27E-03 *1.2 Sulfuric Acid Mist: 7.63E-03 *1.2 H ₂ S: 1.62E-02 *1.2 TRS: 2.57E-02 *1.2 Acetaldehyde: 4.06E-03 *1.2 Formaldehyde: 8.38E-03 *1.2 Hexachlorobenzene: 1.41E-11 *1.2 Hydrochloric Acid: 6.00E-02 *1.2	ESP	99.8%	Heat Input Capacity: 730 MMBtu/hr Natural Gas Black Liquor Firing Rate: 46.5 T BLS/hr Total HAPs emission factor is the sum of all considered HAP emissions factors from NCASI 1050, NDCE Kraft Recovery Furnaces

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Methanol: 2.00E-02 *1.2 Antimony: 2.69E-07 *1.2 Arsenic: 9.07E-07 *1.2 Beryllium: 4.10E-07 *1.2 Cadmium: 6.81E-06 *1.2 Chromium: 1.38E-05 *1.2 Chromium VI: 1.33E-05 *1.2 Cobalt: 1.64E-06 *1.2 Manganese: 5.85E-05 *1.2 Mercury: 3.78E-06 *1.2 Nickel: 2.24E-05 *1.2 Phosphorous: 1.96E-04 *1.2 Selenium: 2.71E-06 *1.2 Total HAPs: 1.13E-01 *1.2			
07	Test Data NCASI TB 1020, Table 4.15 NCASI TB 1050, Tables 4.61, 4.62, 4.63	<u>lb/T BLS</u> PM: 1.14E-01 *1.2 PM ₁₀ : 1.43E-01 *1.2 SO ₂ : 6.0E-03 *1.2 VOC: 1.0E-01 CO: 8.0E-03 *1.2 Lead: 7.64E-07 *1.2 Acetone: 5.21E-04 *1.2 Ammonia: 8.39E-02 *1.2 H ₂ S: 1.18x10 ⁻² *1.2 TRS: 1.87x10 ⁻² *1.2 Acetaldehyde: 1.11E-03 *1.2 Acrolein: 1.25E-04 *1.2 Formaldehyde: 1.10E-04 *1.2 Methanol: 7.33E-02 *1.2 Antimony: 2.63E-07 *1.2 Arsenic: 2.62E-07 *1.2 Beryllium: 1.10E-07 *1.2 Cadmium: 6.76E-07 *1.2 Chromium: 2.12E-06 *1.2 Chromium VI: 3.40E-06 *1.2 Cobalt: 1.98E-07 *1.2	Venturi Scrubber		Black Liquor Firing Rate: 46.5 T BLS/hr Total HAPs emission factor is the sum of all considered HAP emission factors from NCASI TB 1050, Kraft Smelt Dissolving Tanks

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Manganese: 1.53E-05 *1.2 Mercury: 1.15E-07 *1.2 Nickel: 1.65E-06 *1.2 Phosphorus: 2.47E-05 *1.2 Selenium: 4.13E-07 *1.2 Total HAPs: 7.79E-02 *1.2			
08	Test Data NCASI TB 1020, Table 4.13 NCASI TB 1050, Tables 4.56, 4.57, 4.59	<u>lb/T CaO</u> PM: 0.76 *1.2 PM ₁₀ : 1.16 *1.2 SO ₂ : 2.49E-02 *1.2 VOC: 4.32E-02 CO: 6.0E-02 *1.2 NO _x : 7E-01 *1.2 Lead: 1.54E-04 *1.2 Acetone: 4.24E-03 *1.2 Sulfuric Acid Mist: 6.81E-07 *1.2 H ₂ S: 5.64E-02 *1.2 TRS: 40 ppm hourly (CEMS) TRS: 20 ppm annually (CEMS) Acetaldehyde: 7.56E-03 *1.2 Acrolein: 6.72E-04 *1.2 Formaldehyde: 3.13E-03 *1.2 Methanol: 1.30E-02 *1.2 Antimony: 2.71E-06 *1.2 Arsenic: 3.37E-06 *1.2 Beryllium: 4.66E-07 *1.2 Cadmium: 5.81E-06 *1.2 Chromium: 1.96E-04 *1.2 Chromium VI: 4.25E-05 *1.2 Cobalt: 3.72E-06 *1.2 Manganese: 3.91E-04 *1.2 Mercury: 2.35E-06 *1.2 Nickel: 9.04E-05 *1.2	Venturi Scrubber		Heat Input Capacity: 60 MMBtu/hr Natural Gas Lime Production: 11.0 T CaO/yr Total HAPs emission factor is the sum of all considered HAP emissions factors (NCASI TB 1050 from Kraft Lime Kilns with Wet Scrubbers)

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Phosphorus: 2.80E-03 *1.2 Selenium: 1.75E-06 *1.2 Total HAPs: 5.30E-02 *1.2			
11	Emissions routed to SN-04	HVLC Collection System	Closed System		
12	NCASI SARA Handbook, App 4A, Table 6 NCASI SARA Handbook, Chem. Spec. Section, Tables 4, 5	<u>lb/ODTP</u> VOC: 4.65E-01 Acetaldehyde: 4.82E-02 Methanol: 4.17E-01 H ₂ S: 3.95E-02	None		Total HAPs are calculated as the sum of methanol and acetaldehyde emissions VOC emissions are calculated as the sum of the methanol and acetaldehyde emissions
15	AP-42, Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 40 CFR 98, Subpart C, Tables C-1, C-2. PSD BACT Limit established in R0	<u>lb/MMscf</u> PM: 1.9 PM ₁₀ : 7.6 VOC: 5.5 CO: 84.0 SO ₂ : 6E-01 Lead: 5E-04 Benzene: 2.10E-03 Dichlorobenzene: 1.20E-03 Formaldehyde: 7.5E-02 Hexane: 1.80 Naphthalene: 6.1E-04 Polycyclic Organic Matter (POM): 6.98E-04 Toluene: 3.40E03 Arsenic: 2.00E-04 Cadmium: 1.10E-03	FGR Low NO _x Burner		Heat Input: 205 MMBtu/hr Natural Gas Max Firing Rate: 0.201 MMscf/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Chromium (total): 1.40E-03 Cobalt: 8.40E-05 Lead: 5.00E-04 Manganese: 3.80E-04 Mercury: 2.60E-04 Nickel: 2.10E-03 <u>lb/MMBtu</u> NO _x : 6.7E-02 CO ₂ : 117.0 CH ₄ : 2.2E-03 N ₂ O: 2.0E-04 GHG as CO _{2e} : 117.11			
17	NCASI TB 1020, Table 4.1 NCASI TB 1050, Tables 4.65, 4.66	<u>lb/T TO</u> VOC: 2.90 *1.2 Acetone: 2.60E-02 *1.2 TRS: 5.87E-02 *1.2 H ₂ S: 2.83E-02 *1.2 1,1,1-Trichloroethane: 1.10E-04 *1.2 1,1,2-Trichloroethane: 1.30E-03 *1.2 1,2,4-Trichlorobenzene: 2.65E-05 *1.2 1,2-Dibromoethane: 6.90E-06 *1.2 Acetaldehyde: 2.42E-03 *1.2 Acrolein: 1.64E-03 *1.2 Benzene: 1.26E-04 *1.2 Bromomethane: 1.30E-03 *1.2 Carbon Disulfide: 2.22E-03 *1.2 Chlorobenzene: 1.50E-04 v Chloroform: 2.06E-04 *1.2 Chloromethane: 3.06E-02 *1.2	None		Production Rate: 5.00 T TO/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Cumene: 5.85E-02 *1.2 Ethyl Benzene: 6.50E-05 *1.2 Methanol: 9.33E-02 *1.2 Methyl Isobutyl Ketone: 2.60E-04 v Methylene Chloride: 1.05E-05 *1.2 n-Hexane: 9.43E-03 *1.2 Phenol: 1.92E-02 *1.2 Propionaldehyde: 4.92E-04 *1.2 Styrene: 1.10E-03 *1.2 Tetrachloroethylene: 1.30E-03 *1.2 Toluene: 1.60E-03 *1.2 Trichloroethylene: 1.44E-04 *1.2 Xylene: 1.19E-03 *1.2			
22	Testing NCASI TB 1020, Table 4.4 NCASI TB 1050, Tables 4.35, 4.36	<u>lb/ADTUBP</u> PM: 0.036*1.2 VOC: 0.008 CO: 0.012*1.2NOx: 0.047*1.2 Acetone: 2.85E-04 *1.2 TRS: 4.55E-04 *1.2 1,2,4-Trichlorobenzene: 6.40E-07 *1.2 Acetaldehyde: 4.08E-04 *1.2 Benzene: 2.13E-04 *1.2 Carbon Tetrachloride: 3.00E-06 *1.2 Chlorobenzene: 5.00E-07 *1.2 Chloroform: 1.00E-07 *1.2 Ethylbenzene: 1.60E-07 *1.2 Formaldehyde: 7.92E-05 *1.2 Methanol: 3.45E-03 *1.2 n-Hexane: 5.17E-05 *1.2 Styrene: 1.91E-05 *1.2 Toluene: 1.74E-06 *1.2	None		Burner Rating: 4.5 MMBtu/hr Natural Gas Firing Rate: 44.6 ADTUBP/hr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Trichloroethylene: 7.60E-07 *1.2 Xylene: 5.64E-05 *1.2 <u>lb/MMBtu</u> SO ₂ : 10.92 Lead: 4.90E-07 *1.2 CO ₂ : 117.00 CH ₄ : 2.20E-03 N ₂ O: 2.00E-04 GHG as CO _{2e} : 117.11			
23	NCASI TB 1020, Table 4.2 NCASI TB 1050, Tables 4.30, 4.31	<u>lb/ODT chip</u> VOC: 1.2 E-02 *1.2 Acetone: 3.65x10 ⁻⁴ *1.2 TRS: 6.3E-04 *1.2 1,1,2-Trichloroethane: 2.33E-05 *1.2 Acetaldehyde: 2.80E-04 *1.2 Acrolein: 9.77E-06 *1.2 Benzene: 1.30E-06 *1.2 Carbon Tetrachloride: 1.15E-04 *1.2 Chlorobenzene: 2.80E-05 *1.2 Chloroform: 8.39E-04 *1.2 Formaldehyde: 2.20E-05 *1.2 Methanol: 4.75E-03 *1.2 Methyl Isobutyl Ketone: 1.19E-05 *1.2 n-Hexane: 2.12E-05 *1.2 Styrene: 5.28E-05 *1.2 Tetrachloroethylene: 1.22E-05 *1.2 Toluene: 2.90E-05 *1.2 Xylene: 3.98E-05 *1.2	None		ODT = Tons of Oven Dried Chips Chips Cooked at Digester: 84 ODT chips/hr
24		<u>Chip Cyclone, lb/BDT</u> PM/PM ₁₀ : 3.0E-03	None		

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	NCASI TB 1020, Table 9.1, Appendix A NCASI SR-15-01 ADEQ 2003-0822 Memo AP-42 Figure 13.2.1-2 NCASI TB 723, Table 4	<u>Truck Unloading, lb/ton</u> <u>Wood Waste/Bark</u> PM: 4.4E-03 PM₁₀: 3.4E-04 <u>Chips</u> PM: 8.0E-4 PM₁₀: 8.0E-05 <u>Storage Pile lb/day-acre</u> <u>Wood Waste/Bark</u> PM: 1.34E-03 PM: 6.68E-04 <u>Chips</u> PM: 1.04E-04 PM: 5.2E-05 Chip Acres: 7 Bark Acres: 5 <u>Emissions from Chip Piles, lb/hr</u> VOC_{active}: 60.78 VOC_{inactive}: 3.67 <u>Emissions from Bark, lb/Tdw</u> VOC: 2.73			Wood Waste Processing Rate: 276 ton/hr Chip Processing Rate: 312 ton/hr VOC_{active} = [0.323 mg CH₄/m²/sec*(surface area) m² * 2.2046E-06 lb/mg*(3600*24 *365) sec/yr*(1/2000)ton/lb VOC_{inactive} = [0.013mg CH₄/m²/sec*(surface area) m² * 2.2046E-06 lb/mg*(3600*24 *365) sec/yr*(1/2000)ton/lb Surface area of active pile: 11,331.3m² Surface area of inactive pile: 16,997.0 m²
25A 25B	BACT (SN-25A)	<u>lb/ADTFP</u> PM: 2.0E-02*1.2 PM₁₀: 6.0E-02 *1.2 VOC = 1.81*1.2	None		Production Rates: SN-25A: 41.1 ADTFP/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	NCASI TB 942, Table 5.2, Mill D NCASI TB 1020, Tables 8.1, 8.3 NCASI TB 1050, Tables 4.83, 4.85, 9.1	Acetone: 4.35E-02 *1.2 TRS: 2.5E-02 *1.2 1,1,1-Trichloroethane: 1.80E-03 *1.2 1,1,2-Trichlorethane: 2.10E-03 *1.2 1,2,4-Trichlorobenzene: 6.85E-03 *1.2 Acetaldehyde: 1.32E-01 *1.2 Acrolein: 6.15E-03 *1.2 Benzene: 8.50E-04 *1.2 Biphenyl: 1.74E-02 *1.2 Carbon Disulfide: 2.58E-03 *1.2 Chlorobenzene: 7.60E-04 *1.2 Chloroform: 2.41E-03 *1.2 Cumene: 2.21E-03 *1.2 Formaldehyde: 2.64E-02 *1.2 Methanol: 1.55 *1.2 Methyl Isobutyl Ketone: 2.29E-03 *1.2 Methylene Chloride: 4.70E-03 *1.2 Naphthalene: 3.02E-03 n-Hexane: 3.90E-04 *1.2 Phenol: 5.61E-03 *1.2 Styrene: 2.05E-03 *1.2 Tetrachloroethylene: 6.10E-03 *1.2 Toluene: 2.59E-03 *1.2 Trichloroethylene: 3.83E-03 *1.2 Diethylene Glycol Monobutyl Ether: 2.70E-03			SN-25B: 31.3 ADTFP/hr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied. The methanol emission factor is based on calculation (lb MeOH/ADTFP) = 0.0048 * x + 0.0953 where x is the MeOH ppm of the water.
26 27	AP-42 Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4	<u>lb/MMscf</u> PM: 1.9 PM ₁₀ : 7.6 VOC: 5.5	None		Air Heaters Unit Capacity:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	40 CFR 98, Subpart C, Table C-1 and C-2.	SO ₂ : 6.0E-01 NO _x : 100.0 CO: 84.0 Sulfuric Acid Mist: 6.0E-02 Lead: 5.00E-04 CO ₂ : 119,340.0 CH ₄ : 2.2440 N ₂ O: 2.04E-01 GHG as CO _{2e} : 119,456.9 Benzene: 2.10E-03 Dichlorobenzene: 1.20E-03 Formaldehyde: 7.50E-02 Hexane: 1.80E+00 Naphthalene: 6.10E-04 Polycyclic Organic Matter (POM): 6.98E-04 Toluene: 3.40E-03 Arsenic: 2.00E-04 Cadmium: 1.10E-03 Chromium (total): 1.40E-03 Cobalt: 8.40E-05 Manganese: 3.80E-04 Mercury: 2.60E-04 Nickel: 2.10E-03			10.0 MMBtu/hr Natural Gas This includes a conservative engineering estimate that 10% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions
30	LandGEM AP-42 Section 13.2.4	<u>tpy</u> VOC: 11.9 CO: 1.5 Acetone: 1.49E-01 TRS: 0.68 Total HAPs: 9.73 <u>lb/ton</u> PM: 1.08E-03 PM ₁₀ : 5.10E-04	None		Maximum Amount of Material Sent to Landfill: 200 ton/hr PM/PM ₁₀ /PM _{2.5} emissions determined from the Aggregate Drop Point

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
					Equation: E [lb/ton] = $0.0032k \times (U/5)^{1.3} / (M/2)^{1.4}$ where: k = particle size multiplier U = mean wind speed M = surface moisture content
31	NCASI TB 1020, Table 4.3 NCASI TB 1050, Tables 4.37, 4.38	<u>lb/hr/tank</u> VOC: $5.40E-01 * 1.2$ Acetone: $1.60E-02 * 1.2$ TRS: $2.06E-01 * 1.2$ H ₂ S: $3.28E-03 * 1.2$ 1,1,1-Trichloroethane: $1.32E-04 * 1.2$ 1,1,2-Trichloroethane: $9.31E-06 * 1.2$ 1,2,4-Trichlorobenzene: $3.81E-05 * 1.2$ 1,2-Dichloroethane: $9.65E-05 * 1.2$ 1,3-Butadiene: $5.45E-05 * 1.2$ Acetaldehyde: $5.06E-04 * 1.2$ Acrolein: $1.86E-04 * 1.2$ Benzene: $2.42E-05 * 1.2$ Carbon Disulfide: $5.15E-03 * 1.2$ Carbon Tetrachloride: $3.23E-04 * 1.2$ Chlorobenzene: $3.67E-06 * 1.2$ Chloroform: $8.34E-07 * 1.2$ Cumene: $7.15E-04 * 1.2$ Ethyl Benzene: $2.36E-05 * 1.2$	None		Number of Tanks: 5

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Formaldehyde: 1.21E-04 *1.2 Methanol: 1.16E-01 *1.2 Methyl Isobutyl Ketone: 2.81E-04 *1.2 Methylene Chloride: 1.98E-05 *1.2 n-Hexane: 1.39E-05 *1.2 Propionaldehyde: 1.21E-03 *1.2 Styrene: 2.40E-04 *1.2 Tetrachloroethylene: 1.42E-03 *1.2 Toluene: 1.66E-04 *1.2 Trichloroethylene: 7.77E-06 *1.2 Xylene: 1.08E-04 *1.2			
32	BACT NCASI TB 1020, Table 4.14 NCASI TB 1050, Tables 4.43, 4.44, 4.79	<u>lb/T CaO</u> VOC: 6.60E-02 *1.2 <u>Green Liquor Tanks, lb/hr/tank</u> Acetone: 1.20E-01*1.2 TRS: 4.37E-02*1.2 Acetaldehyde: 3.10E-02 *1.2 Cresols: 2.60E-02 *1.2 Methanol: 3.65 *1.2 Phenol: 2.00E-02 *1.2 <u>Green Liquor Clarifiers, lb/T CaO</u> Acetone: 1.50E-03 *1.2 TRS: 6.20E-04 *1.2 Acetaldehyde: 1.00E-04 *1.2 Benzene: 2.80E-05 *1.2 Methanol: 1.30E-01 *1.2 Methyl Isobutyl Ketone: 1.10E-05 *1.2 Styrene: 1.10E-04 *1.2	None		Lime Process Rate: 11.0 T CaO/hr Number of Clarifiers: 3 Number of Tanks: 2 VOC emissions are determined by the VOC emissions factor and Methanol emissions from the storage tanks TRS emissions factor is taken as the sum of those for Dimethyl Disulfide and

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Toluene: 1.00E-05 *1.2 Xylene: 2.00E-04 *1.2			Methyl Mercaptan
36	NCASI TB 1020, Table 4.14 NCASI TB, 1050, Table 4.69, 4.70, 4.71, 4.72	<u>lb/T CaO</u> <u>Slaker:</u> VOC: 4.10E-02 *1.2 Ammonia: 2.99E-01 *1.2 TRS: 8.78E-02 *1.2 Acetaldehyde: 2.89E-02 *1.2 Benzene: 4.14E-05 *1.2 Carbon Disulfide: 1.54E-06 *1.2 Chlorobenzene: 1.91E-06 *1.2 Methanol: 3.49E-01 *1.2 Methyl Isobutyl Ketone: 2.84E-04 *1.2 Methylene Chloride: 4.35E-03 *1.2 n-Hexane: 8.34E-06 *1.2 Phenol: 8.70E-04 *1.2 Styrene: 3.04E-04 *1.2 Toluene: 1.86E-04 *1.2 Trichloroethylene: 2.72E-06 *1.2 Xylene: 1.45E-06 *1.2 <u>Causticizers:</u> VOC: 8.3E-04 *1.2 Ammonia: 1.26E-01 *1.2 TRS: 5.55E-02 *1.2 1,2,4-Trichlorobenzene: 7.09E-07 *1.2 1,2-Dichloroethane: 8.40E-08 *1.2 Acetaldehyde: 9.60E-04 *1.2 Acrolein: 1.70E-05 *1.2 Benzene: 1.40E-05 *1.2	None		Lime Production: 11.0 T CaO/hr VOC adjusted emissions are estimated as the sum of those emissions predicted by the VOC emission factor, Methanol emission factor for Slakers and Methanol emission factor for Causticizers, each with a 20% safety factor.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Biphenyl: 1.34E-07 *1.2 Chlorobenzene: 1.14E-07 *1.2 Chloroform: 7.60E-08 *1.2 Formaldehyde: 1.75E-05 *1.2 Methanol: 5.50E-04 *1.2 Methyl Isobutyl Ketone: 1.60E-06 *1.2 Methylene Chloride: 4.80E-06 *1.2 Naphthalene: 6.20E-08 *1.2 n-Hexane: 9.50E-07 *1.2 Phenol: 1.94E-05 *1.2 Propionaldehyde: 7.20E-05 *1.2 Styrene: 1.72E-06 *1.2 Tetrachloroethylene: 3.90E-06 *1.2 Toluene: 4.70E-06 *1.2 Xylene: 1.44E-06 *1.2			
37	NCASI TB 1020, Table 4.2 NCASI TB 849, Table B-4, IV.B NCASI TB 1050 Table 4.28	<u>lb/ADTUBP</u> VOC: 7.10E-01 *1.2 Acetone: 3.00E-02 *1.2 TRS: 1.10E-01 *1.2 1,2,4-Trichlorobenzene: 5.70E-03 *1.2 Acetaldehyde: 7.60E-03 *1.2 Acrolein: 4.74E-03 *1.2 Benzene: 4.90E-04 *1.2 Carbon Disulfide: 1.80E-04 *1.2 Carbon Tetrachloride: 5.08E-03 *1.2 Chlorobenzene: 5.20E-04 *1.2 Chloroform: 9.98E-03 *1.2 Cumene: 1.17E-03 *1.2 Ethyl Benzene: 1.22E-03 *1.2 Formaldehyde: 5.40E-03 *1.2	#2 Lime Kiln NCG Flare		Firing Rate: 44.6 ADTUBP/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Methanol: 7.50E-02 *1.2 Methyl Isobutyl Ketone: 3.50E-03 *1.2 n-Hexane: 6.60E-04 *1.2 Phenol: 5.70E-03 *1.2 Styrene: 5.00E-03 *1.2 Toluene: 1.39E-03 *1.2 Xylene: 4.29E-03 *1.2			
38	NCASI TB 1020, Table 4.6 NCASI TB 1050, Table D5, 4.34	<u>lb/ADTUBP</u> VOC: 2.15E-01 *1.2 Acetone: 4.20E-02 *1.2 H ₂ S: 7.86E-03 *1.2 TRS: 1.85E-01 *1.2 Acetaldehyde: 1.40E-03 *1.2 Benzene: 2.17E-04 *1.2 Carbon Tetrachloride: 5.30E-03 *1.2 Methanol: 3.50E-01 *1.2 Methyl Isobutyl Ketone: 8.33E-05 *1.2 Methylene Chloride: 3.43E-04 *1.2 Styrene: 1.15E-03 *1.2 Toluene: 2.97E-04 *1.2 Xylene: 1.73E-04 *1.2	#3 WW Boiler #4 Package Boiler		Firing Rate: 44.6 ADTUBP/hr VOC adjusted emissions are estimated as the sum of those emissions predicted by the VOC emission factor and Methanol emission factor
39	Emissions Routed to SN-04	HVLC Collection System			
40	AP-42 Sections 13.2.1, 13.2.2	<u>lb/VMT Unpaved</u> PM ₁₀ : 1.93 (Daily Max) PM ₁₀ : 1.38 (Annual) PM: 7.24 (Daily Max) PM: 5.16 (Annual) <u>Paved</u> PM ₁₀ : 8.0E-02 (Daily Max)			PM emissions are predicted factors developed from formulae retrieved from AP-42, 13.2.1-2

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		PM ₁₀ : 8.0E-02 (Annual) PM: 4.2E-01 (Daily Max) PM: 3.9E-01 (Annual)			Unpaved emissions factors are developed from AP-42, Section 13.2.2, eqs 1a, 2 Paved emissions factors are developed from AP-42, Section 13.2.1.3, eqs 1,2
41	AP-42 Table 3.3-1, 3.3-2 NSPS Subpart III, Table 4 40 CFR 98, Subpart C, Table C-1 and C-2	<u>lb/hp-hr</u> VOC: 2.51E-03 SO ₂ : 2.05E-03 Sulfuric Acid Mist: 3.57E-05 <u>g/hp-hr</u> PM: 1.5E-01 PM ₁₀ : 1.5E-01 CO: 2.6 NO _x : 3.0 <u>lb/MMBtu</u> Benzene: 9.33E-04 Toluene: 4.09E-04 Xylene: 2.85E-04 Formaldehyde: 1.18E-03 Acetaldehyde: 7.67E-04 Naphthalene: 8.48E-05	None		Engine HP: 305 hp Heat Input: 2.135 MMBtu/hr Diesel This includes a conservative estimate (using RBLC BACT for SN-610 and SN-611) that 1.74% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions
42 43 44	AP-42 Table 3.3-1, 3.3-2 40 CFR 98, Subpart C, Table C-1 and C-2	<u>lb/hp-hr</u> PM: 2.20E-03 PM ₁₀ : 2.20E-03 VOC: 2.51E-03 SO ₂ : 2.05E-03 CO: 6.68E-03 NO _x : 3.10E-02	None		<u>SN-42</u> Engine HP: 207 hp Heat Input: 1.449 MMBtu/hr Diesel

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Sulfuric Acid Mist: 3.57E-05 <u>lb/MMBtu</u> Benzene: 9.33E-04 Toluene: 4.09E-04 Xylene: 2.85E-04 Formaldehyde: 1.18E-03 Acetaldehyde: 7.67E-04 Naphthalene: 8.48E-05			<u>SN-43</u> Engine HP: 75 hp Heat Input: 0.525 MMBtu/hr Diesel <u>SN-44</u> Engine HP: 34 hp Heat Input: 0.238 MMBtu/hr Diesel This includes a conservative estimate (using RBLC BACT for SN-610 and SN-611) that 1.74% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions
45	AP-42, Tables 1.4-2, 3.2-3 40 CFR 98, Subpart C, Table C-1 and C-2	<u>lb/MMBtu</u> PM: 9.50E-03 PM ₁₀ : 1.94E-02 VOC: 2.96E-02 SO ₂ : 5.88E-04 CO: 3.72 NO _x : 2.21 Lead: 4.90E-07 Sulfuric Acid Mist: 1.02E-05			Engine HP: 23.6 hp Heat Input: 0.165 MMBtu/hr Natural Gas This includes a conservative estimate (using RBLC BACT for SN-610 and

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		1,1,2,2-Tetrachloroethane: 2.53E-05 1,3-Butadiene: 6.63E-04 Acetaldehyde: 2.79E-03 Acrolein: 2.63E-03 Benzene: 1.58E-03 Formaldehyde: 2.05E-02 Methanol: 3.06E-03 Methylene Chloride: 4.12E-05 Toluene: 5.58E-04 Xylene: 1.95E-04			SN-611) that 1.74% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions
46	Vendor Guarantee AP-42, Tables 1.4-2, 1.4-3, 1.4-4 40 CFR 98, Subpart C, Table C-1 and C-2	<u>lb/MMBtu</u> PM: 5.00E-03 PM ₁₀ : 5.00E-03 VOC: 6.60E-03 SO ₂ : 1.20E-03 CO: 4.80E-02 NO _x : 3.26E-02 Lead: 4.90E-07 Sulfuric Acid Mist: 1.20E-04 <u>lb/MMscf</u> Benzene: 2.10E-06 Dichlorobenzene: 1.20E-03 Formaldehyde: 7.50E-02 Hexane: 1.80 Naphthalene: 6.10E-04 Polycyclic Organic Matter (POM): 6.98E-04 Toluene: 3.40E-03 Arsenic: 2.00E-04 Cadmium: 1.10E-03 Chromium (total): 1.40E-03 Cobalt: 8.40E-05 Manganese: 3.80E-04 Mercury: 2.60E-04 Nickel: 2.10E-03	FGR Low NO _x Burner		Heat Input: 405 MMBtu/hr Natural Gas Max Natural Gas Firing Rate: 0.397 MMscf/hr Max HVLC Firing Rate: 44.6 ADTUBP/yr This includes a conservative engineering estimate that 10% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
47	AP-42, Tables 3.3-1, 3.3-2 NSPS Subpart IIII, Table 2 40 CFR 98, Subpart C, Tables C-1, C-2	<u>lb/hp-hr</u> VOC: 2.51E-03 SO ₂ : 2.05E-03 Sulfuric Acid Mist: 2.05E-04 <u>g/hp-hr</u> PM: 3.00E-01 PM ₁₀ : 3.00E-01 CO: 6.00 NO _x : 5.60 <u>lb/MMBtu</u> Benzene: 9.93E-04 Toluene: 4.09E-04 Xylene: 2.85E-04 Propylene: 2.58E-03 Formaldehyde: 1.18E-03 Acetaldehyde: 7.67E-04 Naphthalene: 8.48E-05			Engine HP: 9.1 hp Heat Input: 0.064 MMBtu/hr This includes a conservative estimate (using RBLC BACT for SN-610 and SN-611) that 1.74% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions
48	NCASI TB 1020, Table 4.3 NCASI TB 1050, Tables 4.45, 4.46	<u>lb/hr/tank</u> VOC: 4.84 *1.2 Acetone: 8.45E-03 *1.2 TRS: 5.33E-01 *1.2 Hydrogen Sulfide: 1.13E-02 *1.2 1,1,2-Trichloroethane: 6.20E-05 *1.2 Acetaldehyde: 5.20E-03 *1.2 Benzene: 1.75E-05 *1.2 Chlorobenzene: 2.00E-05 *1.2 Chloroform: 4.46E-03 *1.2 Methanol: 2.40E-01 *1.2 Methyl Isobutyl Ketone: 6.18E-04 *1.2 n-Hexane: 1.69E-04 *1.2 Phenol: 5.17E-02 *1.2			No. of Tanks: 2

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Propionaldehyde: 2.30E-03 *1.2 Styrene: 2.67E-04 *1.2 Tetrachloroethylene: 6.32E-05 *1.2 Toluene: 2.04E-04 *1.2 Trichloroethylene: 6.07E-05 *1.2 Xylene: 2.37E-04 *1.2			
49	NCASI TB 1020, Table 4.3 NCASI TB 1050 Tables 4.39, 4.40	<u>lb/hr/tank</u> VOC: 1.10E-01 *1.2 Acetone: 2.80E-02 *1.2 TRS: 7.43E-02 *1.2 H ₂ S: 4.89E-02 *1.2 1,1,2-Trichloroethane: 1.57E-04 *1.2 1,2,4-Trichlorobenzene: 4.55E-05 *1.2 1,3-Butadiene: 2.89E-05 *1.2 Acetaldehyde: 2.02E-02 *1.2 Acrolein: 1.78E-05 *1.2 Benzene: 1.06E-05 *1.2 Carbon Disulfide: 1.99E-03 *1.2 Chlorobenzene: 2.72E-07 *1.2 Chloroform: 5.39E-05 *1.2 Cumene: 8.19E-06 *1.2 Ethyl Benzene: 5.62E-05 *1.2 Formaldehyde: 5.00E-04 *1.2 Methanol: 1.30E-01 *1.2 Methyl Isobutyl Ketone: 1.32E-04 *1.2 Methylene Chloride: 1.45E-05 *1.2 n-Hexane: 3.05E-05 *1.2 Phenol: 3.59E-03 *1.2 Propionaldehyde: 2.30E-03 *1.2			No. of Tanks: 4 The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Styrene: 1.40E-04 *1.2 Tetrachloroethylene: 1.66E-05 *1.2 Toluene: 8.63E-04 *1.2 Trichloroethylene: 2.61E-05 *1.2 Xylene: 2.94E-05 *1.2			
50	BACT NCASI TB 1020, Table 4.14 NCASI TB 1050, Table 4.73, 4.74	<u>lb/T CaO</u> VOC: 2.20E-02 *1.2 <u>Precoat Filter</u> 1,1,1-Trichloroethane: 5.73E-05 *1.2 1,2,4-Trichlorobenzene: 1.02E-05 *1.2 1,2-Dichloroethane: 1.27E-05 *1.2 Acetaldehyde: 1.99E-03 *1.2 Acrolein: 5.32E-05 *1.2 Benzene: 7.52E-06 *1.2 Chlorobenzene: 1.01E-05 *1.2 Chloroform: 1.40E-05 *1.2 Ethyl Benzene: 5.00E-06 *1.2 Formaldehyde: 2.00E-04 *1.2 Methanol: 1.12E-02 *1.2 Methyl Isobutyl Ketone: 1.12E-04 *1.2 Methylene Chloride: 2.98E-05 *1.2 n-Hexane: 1.60E-05 *1.2 Styrene: 2.59E-05 *1.2 Tetrachloroethylene: 2.13E-05 *1.2 Toluene: 1.17E-04 *1.2 Trichloroethylene: 6.20E-06 *1.2 Xylene: 3.40E-05 *1.2 <u>Precoat Filter Vacuum Pump Exhaust</u>			Lime Production: 11.0 T CaO/yr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		1,2,4-Trichlorobenzene: 2.28E-04 *1.2 Acetaldehyde: 7.60E-03 *1.2 Benzene: 5.25E-06 *1.2 Carbon Disulfide: 3.80E-05 *1.2 Chloroform: 4.95E-05 *1.2 Methanol: 3.50E-02 *1.2 Methyl Isobutyl Ketone: 3.30E-04 *1.2 Methylene Chloride: 2.60E-05 *1.2 n-Hexane: 6.70E-05 *1.2 Propionaldehyde: 3.40E-04 *1.2 Styrene: 2.41E-05 *1.2 Toluene: 5.11E-05 *1.2 Xylene: 2.29E-05 *1.2			
51	BACT NCASI TB 1050, Table 4.41, 4.42	<u>lb/hr/tank</u> VOC: 1.23E-02 *1.2 Acetone: 1.00E-02 *1.2 H ₂ S: 9.19E-03 *1.2 TRS: 1.93E-04 *1.2 Methanol: 3.10E-02 *1.2			Lime Production: 11.0 T CaO/hr No. of Tanks: 5 The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.
52	NCASI TB 1020, Table 4.14	<u>lb/T CaO</u> VOC: 6.60E-02 *1.2 Acetaldehyde: 3.60E-04 *1.2 Methanol: 9.84E-03 *1.2			Lime Production: 11.0 T CaO/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	NCASI TB 1050, Table 4.75	Methylene Chloride: 2.64E-05 *1.2 n-Hexane: 3.00E-05 *1.2 Toluene: 3.90E-05 *1.2 Trichloroethylene: 4.60E-06 *1.2 Xylene: 1.76E-06 *1.2			The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.
53	NCASI TB 1020, Table 4.16 NCASI TB 1050, Table 4.88	<u>lb/T BLS</u> VOC: 1.30E-03 *1.2 1,2,4-Trichlorobenzene: 8.22E-06 *1.2 Acetaldehyde: 1.07E-04 *1.2 Acrolein: 6.04E-06 *1.2 Benzene: 2.29E-07 *1.2 Biphenyl: 5.80E-07 *1.2 Carbon Disulfide: 5.60E-06 *1.2 Chlorobenzene: 5.48E-07 *1.2 Formaldehyde: 9.50E-06 *1.2 Methanol: 9.80E-04 *1.2 Methyl Isobutyl Ketone: 1.40E-06 *1.2 Methylene Chloride: 1.60E-05 *1.2 n-Hexane: 2.39E-07 *1.2 Phenol: 3.60E-05 *1.2 Propionaldehyde: 3.80E-05 *1.2 Styrene: 1.15E-06 *1.2 Tetrachloroethylene: 1.40E-06 *1.2 Toluene: 4.77E-06 *1.2 Trichloroethylene: 4.07E-07 *1.2 Xylene: 1.60E-06 *1.2			Production Rate: 46.5 T BLS/hr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
101	BACT NCASI SR-15-01, Table 6.1 NCASI TB 1020, Appendix A NCASI TB 723, Table 4	<u>lb/T dw</u> PM/PM₁₀: 2.9E-03 <u>Fugitive VOC (tpy)</u> VOC_{active}: 361.6 tpy VOC_{inactive}: 21.9 tpy	None		Wood Processing Rate: 338 ton/hr Chip Processing Rate: 281 ton/hr Moisture Content: 50% Bark Processing Rate: 56 ton/hr Active Area (40%): VOC_{active} = [0.323mg CH₄/m²/sec*(surface area)m² * 2.2046E-06 lb/mg*(3,600*24*365) sec/yr*(1/2,000)ton/lb * (12/16) lb C/lb CH₄ Inactive Area (60%): VOC_{inactive} = [0.013mg CH₄/m²/sec*(surface area)m² * 2.2046E-06 lb/mg*(3,600*24*365) sec/yr*(1/2,000)ton/lb * (12/16) lb C/lb CH₄

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
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 = PM ₁₀ Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fourth Edition with Supplements A, B, and C, AP-42. , per the EPA Factor Information Retrieval (WebFIRE) database, updated 9/7/2016 for SCC Code 3-07-008-01,	<u>lb/ton</u> <u>Debarking</u> PM: 2.84E-04 PM ₁₀ : 2.84E-04 <u>Chipping</u> PM: 2.00E-02 PM ₁₀ : 1.10E-02	None		Wood Processing Rate: 338 ton/hr Chip Processing Rate: 281 ton/hr Bark Processing Rate: 56 ton/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Log Debarking.				
301	BACT NCASI TB 1020, Table 4.4 AP-42, Table 1.4-2 40 CFR 98, Subpart C, Tables C-1, C-2 NCASI TB 1050, Tables 4.35, 4.36	<u>lb/ADTUBP</u> PM/PM₁₀: 3.60E-02 *1.2 VOC: 3.00E-03 *1.2 SO₂: 4.50E-02 *1.2 CO: 1.20E-02 *1.2 NO_x: 4.70E-02 *1.2 Acetone: 2.85E-04 *1.2 TRS: 4.55E-04 *1.2 1,2,4-Trichlorobenzene: 6.40E-07 *1.2 Acetaldehyde: 4.08E-04 *1.2 Benzene: 2.13E-04 *1.2 Carbon Tetrachloride: 3.00E-06 *1.2 Chlorobenzene: 5.00E-07 *1.2 Chloroform: 1.00E-07 *1.2 Ethylbenzene: 1.60E-07 *1.2 Formaldehyde: 7.92E-05 *1.2 Methanol: 3.45E-03 *1.2 n-Hexane: 5.17E-05 *1.2 Styrene: 1.91E-05 *1.2 Toluene: 1.74E-06 *1.2 Trichloroethylene: 7.60E-07 *1.2 Xylene: 5.64E-05 *1.2 <u>lb/MMBtu</u> Lead: 4.90E-07 *1.2 CO₂: 117.00 CH₄: 2.20E-03 N₂O: 2.00E-04 GHG as CO_{2e}: 117.11	Wet Scrubber	Not Specified	This source is an incinerator controlling other sources. Production Rate: 91.7 ADTUBP/hr Burner Rating: 10 MMBtu/hr Natural Gas The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.
302	BACT	<u>lb/ADTUBP</u>	SN-301 or SN-401		Firing Rate:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	NCASI TB 1020, Table 4.2 NCASI TB 1050, Tables 4.28, 4.29	VOC: 7.10E-01 *1.2 Acetone: 3.00E-02 *1.2 H ₂ S: 2.20E-01 *1.2 TRS: 1.26 *1.2 1,2,4-Trichlorobenzene: 5.70E-03 *1.2 Acetaldehyde: 7.60E-03 *1.2 Acrolein: 4.74E-03 *1.2 Benzene: 4.90E-04 *1.2 Carbon Disulfide: 1.80E-04 *1.2 Carbon Tetrachloride: 5.08E-03 *1.2 Chlorobenzene: 5.20E-04 *1.2 Chloroform: 9.98E-03 *1.2 Cumene: 1.17E-03 *1.2 Ethyl Benzene: 1.22E-03 *1.2 Formaldehyde: 5.40E-03 *1.2 Methanol: 7.50E-02 *1.2 Methyl Isobutyl Ketone: 3.50E-03 *1.2 n-Hexane: 6.60E-04 *1.2 Phenol: 5.70E-03 *1.2 Styrene: 5.00E-03 *1.2 Toluene: 1.39E-03 *1.2 Xylene: 4.29E-03 *1.2			91.7 ADTUBP/hr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied.
303	BACT NCASI TB 1020, Tables 4.2, 4.3, 4.5, 4.6, 4.7 NCASI TB 1050, Tables 4.34, D5	<u>lb/ODT Chip</u> <u>New Continuous Digester</u> <u>Chip Bin</u> VOC: 4.64E-01 *1.2 <u>lb/ADTUBP</u> <u>Knotter Systems (all)</u> VOC: 5.00E-03 *1.2 <u>Pre-Washer Screens (all)</u> VOC: 4.00E-03 *1.2	SN-301 or SN-401		Post MMP Total Pulp Production: 91.7 ADTUBP/hr Existing Washers Pulp Production: 44.6 ADTUBP/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Domtar Plymoth Vendor Guarantee (Lignin Process TRS Data)	<u>New Washer System</u> VOC: 2.15E-01 *1.2 <u>Existing Brown Stock Washers</u> VOC: 2.15E-01 *1.2 <u>Pulp Deckers (all)</u> VOC: 7.70E-02 *1.2 <u>Lignin Process Only</u> H ₂ S: 9.19E-01 *1.2 TRS: 9.83E-01 *1.2 <u>Venting HVLC Systems</u> Acetone: 4.20E-02 *1.2 H ₂ S: 7.86E-03 *1.2 TRS: 1.85E-01 *1.2 Acetaldehyde: 1.40E-03 *1.2 Benzene: 2.17E-04 *1.2 Carbon Tetrachloride: 5.30E-03 *1.2 Methanol: 3.50E-01 *1.2 Methyl Isobutyl Ketone: 8.33E-05 *1.2 Methylene Chloride: 3.43E-04 *1.2 Styrene: 1.15E-03 *1.2 Toluene: 2.97E-04 *1.2 Xylene: 1.73E-04 *1.2 <u>lb/hr/tank</u> <u>Weak Black Liquor Storage Tanks</u> VOC: 5.40E-01 *1.2 <u>Kraft Pulp Storage Towers</u> VOC: 4.84*1.2			New Washer Pulp Production: 73.4 ADTUBP/hr Continuous Digester Feed: 111.1 ODT chips/hr No. of Weak Black Liquor Storage Tanks: 7 No. of New Kraft Pulp Storage Towers: 2 The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied Emissions are estimated as the sum of uncontrolled VOC during venting periods
401	BACT	<u>gr/dscf at 8% O₂</u>	ESP		Heat Input:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	40 CFR 63 Subpart MM	PM: 1.5E-02 PM ₁₀ : 3.0E-02			1,128 MMBtu/hr Natural Gas
	40 CFR 60 Subpart BBa	<u>ppmdv at 8% O₂</u> VOC: 10.0 CO: 200.0 NO _x : 85.0			Black Liquor Firing Rate: 93.8 T BLS/hr
	40 CFR 98, Subpart AA	TRS: 5.00			<u>Stack Data:</u> ACFM: 515,892
	NCASI TB 1050, Table 4.52	<u>lb/MMBtu</u> Sulfuric Acid Mist: 4.00E-03 H ₂ S: 3.00E-03			Stack O ₂ %: 1.67%
	NCASI TB 1050, Table 4.54	CO ₂ : 208.12 CH ₄ : 4.19E-03 N ₂ O: 9.26E-04 GHG as CO _{2e} : 208.50			Stack Moisture Content: 24.10%
		<u>lb/ T BLS</u> Acetone: 5.27E-03 *1.2			DSCFM: 254,612
		Acetaldehyde: 4.06E-03 *1.2 Formaldehyde: 8.38E-03 *1.2 Hydrochloric Acid: 6.00E-02 *1.2 Mercury: 3.78E-06 *1.2 Methanol: 2.50E-02 Methylene Chloride: 9.21E-05 *1.2 Total HAPs: 9.28E-02 *1.2 + 2.50E-02			DSCFM at 8% O ₂ : 411,573
					GHG as CO _{2e} emissions are computed using equation AA-1 in 40 FR 98, Subpart AA
					Methanol emission factor determined by 40 CFR 63 Subpart MM so no safety factor applied.
					Total HAPs emission factor

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
					is the sum of all considered HAP emission factors (NCASI TB 1050 from NDCE Kraft Recovery Furnaces) less Methanol which is then added to the Methanol factor determined from 40 FR 63 Subpart MM
501	BACT 40 CFR 98, Subpart C, Table C-1 40 CFR 98, Subpart AA 40 CFR 63 Subpart MM 40 CFR 60 Subpart BBa NCASI TB 1050 Tables 4.56, 4.57, 4.58	<u>gr/dscf at 10% O₂</u> PM: 1.00E-02 PM ₁₀ : 3.00E-02 <u>ppmvd at 10% O₂</u> VOC: 25.00 SO ₂ : 25.00 CO: 50.00 NO _x : 180.00 TRS: 8.00 <u>tpy</u> CO ₂ : 52253.86 CH ₄ : 2.31 N ₂ O: 0.00E+00 GHG as CO _{2e} : 52312.00 <u>lb/T CaO</u> Acetone: 4.24E-03 *1.2 Sulfuric Acid Mist: 3.60E-02 H ₂ S: 5.64E-02 *1.2	ESP		Heat Input: 88.7 MMBtu/hr Lime Production: 13.8 T CaO/hr Carbonate Make-up: 15,455 ton/yr <u>Stack Data:</u> ACFM: 64,328 Stack O ₂ %: 5.00 Stack Moisture Content: 29.00 % DSCFM:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Acetaldehyde: 7.56E-03 *1.2 Formaldehyde: 3.13E-03 *1.2 Lead: 1.48E-05 *1.2 Mercury: 2.76E-06 *1.2 Methanol: 1.30E-02 *1.2 Methylene Chloride: 1.34E-04 *1.2 Total HAPs: 5.04E-02 *1.2			25,600 DSCFM at 10% O ₂ : 48,862 GHG as CO _{2e} emissions are computed using equations C-1 in 40 CFR 98, Subpart C, AA-1 in 40 CFR 98, Subpart AA, and AA-3 in 40 CFR 98, Subpart AA Total HAPs emission factor is the sum of all considered HAP emission factors (NCASI TB 1050 from Kraft Lime Kilns with ESPs) Sulfuric Acid Mist emission factor is the result of BACT analysis so safety factor not applied
502A	BACT NCASI TB 1020, Table 4.14	<u>lb/T CaO</u> PM/PM ₁₀ : 2.90E-02 *1.2 VOC: 4.10E-02 *1.2 TRS: 8.78E-02 *1.2	Wet Scrubber		Lime Production: 13.83 T CaO/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	NCASI TB 1050, Table 4.70				
502B	BACT NCASI TB 1020, Table 4.14 NCASI TB 1050, Tables 4.71, 4.72	<u>lb/T CaO</u> VOC: 8.30E-04 *1.2 Ammonia: 1.26E-01 *1.2 TRS: 5.55E-02 *1.2			Lime Production: 13.83 T CaO/hr
503	BACT NCASI TB 1020, Table 4.14 NCASI TB 1050, Table 4.44	<u>lb/ton</u> VOC: 6.60E-02 *1.2 <u>lb/hr/tank</u> TRS: 4.37E-02 *1.2			Lime Process Rate: 13.8 T CaO/hr No. of Calcifiers: 1 No. of Tanks: 3
504	BACT NCASI TB 1020, Table 4.14	<u>lb/ton</u> VOC: 6.60E-02 *1.2			Lime Production: 13.8 T CaO/hr
505	BACT NCASI TB 1020, Table 4.14	<u>lb/T CaO</u> <u>Pressure Filter</u> VOC: 7.50E-03 *1.2 <u>lb/hr/tank</u> <u>White Liquor Storage Tanks</u> VOC: 1.23E-02 *1.2 TRS: 1.93E-04 *1.2			Lime Production: 13.8 T CaO/hr No. of Tanks: 7
506	BACT	<u>lb/T CaO</u> <u>Lime Mud Disc Filter</u> VOC: 4.00E-03 *1.2			Lime Production: 13.8 T CaO/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	NCASI TB 1020, Table 4.14	<u>Lime Mud Tanks</u> VOC: 4.32E-02 *1.2			No. of Lime Mud Tanks: 3
507 508	BACT	<u>gr/dscf</u> PM/PM ₁₀ : 1.2E-02	Fabric Filter		Air Flow: 71,220 dscf/hr
509	BACT	<u>gr/dscf</u> PM/PM ₁₀ : 1.2E-02	Fabric Filter		Air Flow: 71,220 dscf/hr
601	BACT MACT SOTA BFB with SNCR performance per vendors 40 CFR 98, Subpart C, Tables C-1, C-2 NCASI 1050, Table 7.1 NCASI Database, 2019, Boiler - w/ ESP or Fabric Filter NCASI TB 1059, Section 5	<u>ppmdv at 3% O₂</u> CO: 130 Ammonia: 10 <u>lb/MMBtu</u> PM: 4.10E-03 PM ₁₀ : 2.40E-02 VOC: 1.70E-02 SO ₂ : 2.50E-02 NO _x : 1.00E-01 <u>Normal Operation</u> CO ₂ : 206.79 CH ₄ : 1.59E-02 N ₂ O: 7.94E-03 GHG as CO _{2e} : 209.56 <u>Startup Operation</u> CO ₂ : 116.98 CH ₄ : 2.20E-03 N ₂ O: 2.20E-04 GHG as CO _{2e} : 117.10 Acetone: 3.82E-04 *1.2 Sulfuric Acid Mist: 2.30E-03 Acetaldehyde: 1.58E-04 *1.2 Formaldehyde: 4.10E-04 *1.2 Hydrochloric Acid: 2.10E-04 Hydrofluoric Acid: 2.54E-05 *1.2 Lead: 1.97E-06 *1.2	Baghouse SNCR WFDS or DFDS FGR		Heat Input: 1,197 MMBtu/hr Natural Gas Biomass Mixture LHV wet: 3,237 Btu/lb Steaming Rate: 600,000 lb steam/hr Natural Gas Load Burner for BFB: 136 MMBtu/hr Number of Load Burners: 4 Natural Gas Startup for BFB: 41 MMBtu/hr Natural Gas Startup Burners: 4 <u>Stack Data</u> ACFM: 373,717 Stack O ₂ %:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Mercury: 8.00E-07 Methanol: 4.85E-04 *1.2 Methylene Chloride: 1.17E-04 *1.2 Total HAPs: 4.02E-03 *1.2 + 2.10E-04 + 8.00E-07			3.10 Stack Moisture Content: 27.60% DSCFM: 184,100 DSCFM at 3% O ₂ : 214,551 GHG as CO _{2e} emissions are computed using equations C-1 in 40 CFR 98 Total HAPs emission factor is the sum of all considered HAP emission factors (NCASI TB 1050 from Wood Fired Boilers) Assumed worst case for ammonia slippage from the SNCR Sulfuric Acid Mist, Hydrochloric Acid, and Mercury emission factors

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
					are the results of BACT analysis so safety factor not applied Total HAPs emission factor is the sum of all considered HAP emission factors (NCASI TB 1050 from Wood Fired Boilers) less Hydrochloric Acid and Mercury which are then added to the summand using the factors determined from MACT
602	BACT	<u>gr/dscf</u> PM/PM ₁₀ : 1.2E-02	Fabric Filter		Silo Volume: 1,932 dscf Air Flow: 90,000 dscf/hr
603	BACT	<u>gr/dscf</u> PM/PM ₁₀ : 1.2E-02	Fabric Filter		Silo Volume: 2,115 dscf Sand Feed Rate: 176 dscf/hr Air displacement during filling: 176 dscf/hr
610 611	BACT Engine Spec Sheet,	<u>g/hp-hr</u> PM: 1.50E-01 PM ₁₀ : 1.50E-01 VOC: 1.40E-01			Engine Rating: 3100 eKW Max fuel load:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Nominal, Prime AP-42, Tables 3.4-1, 3.4-3, 3.4-4 40 CFR 60, Subpart III 40 CFR 98, Subpart C, Table C-1	CO: 7.00E-01 NO _x : 6.39 <u>lb/hp-hr</u> SO ₂ : 1.21E-05 <u>lb/MMBtu</u> CO ₂ : 163.05 CH ₄ : 6.61E-03 N ₂ O: 1.32E-03 GHG as CO _{2e} : 163.61 Benzene: 7.76E-04 Toluene: 2.81E-04 Xylene: 1.93E-04 Formaldehyde: 7.89E-05 Acetaldehyde: 2.52E-05 Acrolein: 7.88E-06 Naphthalene: 1.30E-04			212.9 gal/hr Heating Value: 137000 Btu/gal Diesel Engine HP: 4167 hp Heat Input: 29.1673 MMBtu/hr Fuel Oil Sulfur Content (ULSD): 0.0015 %
612 613	BACT TankESP	<u>lb/yr</u> <u>Working Loss</u> VOC: 2.52 1,2,4-Trimethylbenzene: 1.19E-01 Benzene: 5.11E-03 Ethylbenzene: 7.64E-03 n-Hexane: 1.04E-03 Naphthalene: 1.08E-03 Toluene: 5.88E-02 Xylene: 1.49E-01 <u>Breathing Loss</u> VOC: 1.60 Trimethylbenzene (1,2,4): 7.57E-02 Benzene: 3.26E-03			Tank Volume: 10,000 gal Tank Fill Rate: 5000 gal/hr Turnover: 11 times/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Ethylbenzene: 4.86E-03 n-Hexane: 6.59E-04 Naphthalene: 6.89E-04 Toluene: 3.75E-02 Xylene: 9.46E-02			
701	BACT NCASI TB 942, Table 5.2, Linerboard NCASI TB 1020, Tables 8.1, 8.3 NCASI TB 1050, Tables 4.83, 4.85, 9.1	<u>lb/ADTFP</u> PM: 2.00E-02 *1.2 PM ₁₀ : 6.00E-02 *1.2 VOC: 5.10E-01 *1.2 Acetone: 4.35E-02 *1.2 TRS: 2.50E-02 *1.2 1,1,1-Trichloroethane: 1.80E-03 *1.2 1,1,2-Trichlorethane: 2.10E-03 *1.2 1,2,4-Trichlorobenzene: 6.85E-03 *1.2 Acetaldehyde: 1.10E-01 *1.2 Acrolein: 6.15E-03 *1.2 Benzene: 8.50E-04 *1.2 Biphenyl: 1.74E-02 *1.2 Carbon Disulfide: 2.58E-03 *1.2 Chlorobenzene: 7.60E-04 *1.2 Chloroform: 2.41E-03 *1.2 Cumene: 2.21E-03 *1.2 Formaldehyde: 2.20E-02 *1.2 Methanol*: 1.30 *1.2 Methyl Isobutyl Ketone: 2.29E-03 *1.2 Methylene Chloride: 4.70E-03 *1.2 Naphthalene: 3.02E-03 *1.2 n-Hexane: 3.90E-04 *1.2 Phenol: 5.61E-03 *1.2			Production Rate: 98.8 ADFTP/hr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied The Methanol emission factor is based on calculation (lb MeOH/ADTFP) = 0.0048 * x + 0.0953 where x is the MeOH ppm of the water

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Styrene: 2.05E-03 *1.2 Tetrachloroethylene: 6.10E-03 *1.2 Toluene: 2.59E-03 *1.2 Trichloroethylene: 3.83E-03 *1.2 Diethylene Glycol Monobutyl Ether: 2.70E-03			
702 703	BACT	<u>gr/dscf</u> PM/PM ₁₀ : 1.2E-02	Fabric Filter		Silo Volume: 7,085 dscf Air Flow: 72,000 dscf/hr
901	BACT NCASI TB 1020, Table 7.2 NCASI TB 1050, Table 9.5	<u>lb/ADTFP</u> VOC: 9.00E-03 *1.2 Acetaldehyde: 1.16E-03 *1.2 Biphenyl: 3.77E-04 *1.2 Carbon Disulfide: 1.58E-03 *1.2 Chloroform: 4.98E-05 *1.2 Formaldehyde: 1.38E-04 *1.2 Methanol: 2.53E-03 *1.2 Methylene Chloride: 1.68E-04 *1.2 Phenol: 3.07E-04 *1.2 Propionaldehyde: 1.43E-04 *1.2 Toluene: 1.60E-03 *1.2			Production Rate: 50.0 ADTFP/hr The adjusted VOC emissions are those predicted by the sum of the VOC and Methanol emission factors with a 20% safety factor applied
902A 902B 902C 902D 902E 902F	BACT AP-42, Tables 3.3-1, 3.3-2 40 CFR 60, Subpart III	<u>g/kW-hr</u> PM: 2.00E-01 PM ₁₀ : 2.00E-01 VOC: 1.37 CO: 3.50 NO _x : 4.00 <u>lb/hp-hr</u>			Engine HP: 300 hp Heat Input: 2.1 MMBtu/hr Diesel

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	40 CFR 98, Subpart C, Tables C-1, C-2 40 CFR 1039, Appendix I	SO ₂ : 2.05E-03 Sulfuric Acid Mist: 3.57E-05 <u>lb/MMBtu</u> CO ₂ : 163.05 CH ₄ : 6.61E-03 N ₂ O: 1.32E-03 GHG as CO _{2e} : 163.61 Benzene: 9.33E-04 Toluene: 4.09E-04 Xylene: 2.85E-04 Formaldehyde: 1.18E-03 Acetaldehyde: 7.67E-04 Naphthalene: 8.48E-05			This includes a conservative estimate (using RBL C BACT for SN-610 and SN-611) that 1.74% of SO ₂ emissions will convert to Sulfuric Acid Mist emissions
903	BACT Based on the methodology discussed in "Calculating Realistic PM ₁₀ Emissions from Cooling Towers" by Joel Reisman and Gordon Frisbie, 2002	<u>lb/hr</u> PM: 2.34E-02 PM ₁₀ : 1.78E-02 Total Dissolved Solids: 1,300 mg/L Drift Loss: 0.0005%	Mist Eliminator		Circulating Water Flowrate: 7,200 gpm Drift Mass Flowrate: 2 gal/hr
904	BACT Based on the methodology discussed in "Calculating Realistic PM ₁₀ Emissions from Cooling Towers" by Joel Reisman	<u>lb/hr</u> PM: 1.76E-02 PM ₁₀ : 1.33E-02 <u>Total Dissolved Solids: 1,300 mg/L</u> <u>Drift Loss: 0.0005%</u>	Mist Eliminator		Circulating Water Flowrate: 54,000 gpm Drift Mass Flowrate: 16 gal/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	and Gordon Frisbie, 2002				
990	BACT AP-42, Sections 13.2.1.3, 13.2.2	<u>lb/VMT</u> <u>Unpaved</u> PM: 7.00 (hourly) PM ₁₀ : 1.87 (hourly) PM: 4.99 (annually) PM ₁₀ : 1.33 (annually) <u>Paved</u> PM: 1.34E-01 (hourly) PM ₁₀ : 2.68E-02 (hourly) PM: 1.25E-01 (annually) PM ₁₀ : 2.49E-02 (annually)	Dust Suppressant		Unpaved emissions factors are developed from AP-42, Section 13.2.2, eqs 1a, 2 Paved emissions factors are developed from AP-42, Section 13.2.1.3, eqs 1,2

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	Compliance Mechanism
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 or every 3 years	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	Compliance Mechanism
05A	PM	5 or 29	No later than October 13, 2020 and every	40 CFR 63 Subpart MM

SN	Pollutants	Test Method	Test Interval	Justification
			5 years thereafter	
07	PM PM ₁₀	5 and 202	Every 5 years	Compliance Mechanism; 40 CFR 60 Subpart BBa
07	PM	5 or 29	No later than October 13, 2020 and every 5 years thereafter	40 CFR 63 Subpart MM
07	TRS	16	No later than December 31, 2016 and every 5 years thereafter	8 CAR § 41-704(B); 40 CFR 60 Subpart BBa
08	PM	5 or 29	Initial	40 CFR 63 Subpart MM
08	PM	5 or 29	No later than October 13, 2020 and every 5 years thereafter	40 CFR 63 Subpart MM
39	HAP conc.	Collection 305	Initial	40 CFR 63, Subpart S
46	CO NO _x	10 7E	Every 5 years	Compliance Mechanism
401	PM _{2.5} PM ₁₀ SO ₂ VOC CO NO _x	201A 201A 6C 18 7E 10	Initial and every 12 months thereafter Extendable to 60 months	Compliance Mechanism
401	Methanol	308 or approved	Initial	Compliance Mechanism
501	PM _{2.5} PM ₁₀ SO ₂ VOC CO NO _x	201A 201A 6C 18 7E 10	Initial and every 12 months thereafter Extendable to 60 months	Compliance Mechanism
502A	TRS	16, 16A, 16B or approved	Initial and every 12 months thereafter	Compliance Mechanism

SN	Pollutants	Test Method	Test Interval	Justification
			Extendable to 60 months	
502A 507 508 509	Opacity	9	Weekly	Compliance Mechanism
601	PM	5	Initial	40 CFR 60 Subpart Db
601	Fuel Analysis or testing	Mercury, HCl, TSM	Initial	40 CFR 63 Subpart DDDDD
602 603	Opacity	9	Weekly	Compliance Mechanism

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 scrubber	CPMS	Hourly or Continuously, reduced to 3-hr rolling average	N
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

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/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 CO ₂	CEMS	Continuously	N
23	Temperature of gases from the #5 batch digester to be incinerated	Temperature CEMS 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	Continuously	N
46	NO _x O ₂ CO ₂	CEMS	Continuously	Y
301	Temperature	Temperature	Continuously	Y
401	TRS, O ₂	CEMS	Continuously	Y
401	Opacity	COMS	Continuously	Y
501	TRS, O ₂	CEMS	Continuously	Y
501	Opacity	COMS	Continuously	Y
502A	Scrubber Flow Rate	Flow Meter	Daily	Y
601	TRS, NO _x , O ₂	CEMS	Continuously	Y
601	Opacity	COMS	Continuously	Y
601	Optional CO, PM, HCl	CEMS	Continuously /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%			
		Heat Input	Steam Output	Monthly	Y
		lb/MMBtu			
	Mercury	5.4E-06	6.2E-06		
	PM	4.4E-01	5.5E-01		
	TSM	4.5E-04	5.7E-04		
	CO	3500 ppm	3.5		
	HCl	2.0E-02	2.3E-02		
	Tune-up	-			
	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
	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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/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
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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/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, 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 device for SN-38	2,880 hours/yr	As used On a hourly basis	Y
	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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
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	COMS
07	20%	NEHSAP Subpart MM	Flow Rate & Pressure Differential
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	Burning diesel
45	5%	Department Guidance	Burning natural gas
46	5%	Department Guidance	Burning natural gas
301	5%	Department Guidance/BACT	Burning natural gas
401	20%	Department Guidance/BACT	COMS
501	20%	Department Guidance/BACT	COMS
502A	5%	Department Guidance/BACT	Weekly Opacity Readings
507, 508, 509	5%	Department Guidance/BACT	Weekly Opacity Readings
601	20%	Department Guidance/BACT	COMS
610, 611	20%	Department Guidance/BACT	Burning natural gas
602, 603 702, 703	5%	Department Guidance/BACT	Weekly Opacity Readings
701	5%	Department Guidance/BACT	Proper equipment operation
SN-902A SN-902B	20%	Departmental Guidance	Burning diesel

SN	Opacity	Justification for limit	Compliance Mechanism
SN-902C SN-902D SN-902E SN-902F			

20. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

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	1	0.23	0.02	0.17	2.52	3.01		0.17
Pocket Vent System Heater #2	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 (Lift Truck Shop), 250 gal	3			1.26E-04				1.26E-04
Used Oil Tank (Maintenance Storage), 2033 gal	3			9.92E-04				9.92E-04
Used Oil Tank (Maintenance Shop), 576 gal	3			2.81E-04				2.81E-04
Used Oil Tank (Truck Stop), 277 gal	3			1.35E-04				1.35E-04
Used Oil Tank (PM No. 1), 145 gal	3			7.07E-05				7.07E-05
Diesel Storage Tank (Fire	3			1.55E-04				1.55E-04

Water Pump), 288 gal								
Diesel Storage Tank (Bark Dump), 1061 gal	3			5.15E-04				5.15E-04
Diesel Storage Tank (Maintenance), 2033 gal	3			9.87E-04				9.87E-04
Diesel Storage Tank (Fire Water Pump), 500 gal	3			2.43E-04				2.43E-04
Diesel Storage Tank (Secondary Fiber), 990 gal	3			4.81E-04				4.81E-04
Diesel Storage Tank (Yard Crew Area), 550 gal	3			2.67E-04				2.67E-04
Diesel Storage Tank (Landfill), 500 gal	3			2.43E-04				2.43E-04
Diesel Storage Tank (Marshaling Yard), 500 gal	3			2.43E-04				2.43E-04
Diesel Storage Tank (Project Site - Koontz), 250 gal	3			1.21E-04				1.21E-04
Diesel Storage Tank (Project Site - Sundt), 1000 gal	3			4.85E-04				4.85E-04
A-3 Totals				5.34E-03				5.34E-03
50% Caustic Storage Tank Recovery Area	4							

50% Caustic Storage Tank Tail Oil Area	4							
50% Caustic Storage Tank Secondary Recovery Area	4							
A-4 Totals								
Main Laboratory Vents	5			0.2				
Test Labs in Process Areas	5			0.2				
A-5 Totals				0.4				
Fly Ash Bunker for No. 3 Wood Waste Boiler	13	0.01						
#1 Lime Silo (Sodium Carbonate)	13	0.05						
#2 Lime Silo (Sodium Carbonate)	13	0.05						
Secondary Fiber Plant (Pre MMP)	13			1.68				1.5
Turpentine Loading Operation	13			0.07				
Turpentine Storage Tank (Tank ID 3165)	13			0.08				
Cooling Tower - Unit 0372	13	0.14						
Cooling Tower - Unit 1340	13	0.57						
Cooling Tower - Unit 1347	13	0.57						
Cooling Tower - Unit 28258	13	0.5						
Soda Ash Silos (2)	13	0.02						

Gasoline Storage Tank (Main Gate)	13			0.23				0.23
Gasoline Storage Tank (Project Site - Koontz)	13			0.07				0.07
Gasoline Storage Tank (Project Site - Sundt)	13			0.2				0.2
Diesel Storage Tank (Project Site - Sundt), 12k gal	13			0.01				0.01
Defoamer Tank (Pulp Mill) - Tank ID 1822	13			0.05				0.05
Sludge Press Area - Vent Exhaust	13			0.1				0.1
A-13 Totals		1.91		2.49				2.16

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-R26

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Facility Name: Green Bay Packaging Inc. - Arkansas Kraft
Division
Permit Number: 0224-AOP-R27
AFIN: 15-00001

S/ton factor	28.14	Annual Chargeable Emissions (tpy)	8479.81
Permit Type	Modification	Permit Fee \$	3458.9688

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) 122.92
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	813.8	0.6		
PM ₁₀		1071	1079.6	8.6	8.6	1079.6
PM _{2.5}		646.1	646.1	0		
SO ₂		630.8	630.8	0	0	630.8
VOC		3619.8	3695.3	75.5	75.5	3695.3
CO		2708.6	2730.1	21.5		
NO _x		2584.7	2584.9	0.2	0.2	2584.9
GHG	☐	2194900	2393259	198359		
Lead	☐	0.17801	0.105105	-0.072905		
H2S	☐	38	64.05	26.05		
TRS	☒	218.68	222.73	4.05	4.05	222.73
Sulfuric Acid Mist	☒	34.59	36.51	1.92	1.92	36.51
Acetaldehyde	☐	137.7	125.78	-11.92		
Acrolein	☐	6.37	7.43	1.06		
Arsenic	☐	0.08	0.12	0.04		
Benzene	☐	0	3.947077	3.947077		
Beryllium	☐	0	0.07	0.07		
Biphenyl	☐	12.93	15.75	2.82		
Cadmium	☐	0.06	0.1	0.04		
Chromium VI	☐	0.04	0.06	0.02		
Cobalt	☐	0.06	0.1	0.04		
Formaldehyde	☐	30.73	30.48	-0.25		
Hydrochloric Acid	☒	59.4	88.7	29.3	29.3	88.7
Hydrofluoric Acid	☒	0.16	0.23	0.07	0.07	0.23
Manganese	☐	0.48	0.63	0.15		
Mercury	☐	0.11	0.12	0.01		
Methanol	☐	1393.32	1447.45	54.13		
Methylene Chloride	☒	4.31	6.17	1.86	1.86	6.17
Nickel	☐	0.08	0.13	0.05		
Phenol	☐	0	13.93	13.93		
Phosphorus	☐	0.45	2.59	2.14		
Tetrachloroethylene	☒	0	6.24	6.24	6.24	6.24
Total HAPs	☐	2019.04	1836.72	-182.32		
Acetone	☒	51.25	52.67	1.42	1.42	52.67

Ammonia



82.2

75.96

-6.24

-6.24

75.96