

STATEMENT OF BASIS

For the issuance of Air Permit # 0271-AOP-R25 AFIN: 21-00036

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Clearwater Paper Corporation  
5082 Highway 4 North  
Arkansas City, Arkansas 71630

3. PERMIT WRITER:

Alexander Sudibjo

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
10/14/2022	Minor Mod	New diesel fire pump engine (SN-47)

6. REVIEWER'S NOTES:

With this minor modification, the facility is removing the 269 Hp diesel fire pump engine (SN-41) and installing a new 311 Hp diesel fire pump engine (SN-47). The facility's permitted annual emissions are decreasing by 0.1 tpy PM/PM<sub>10</sub>, 0.1 tpy VOC, and 1.6 tpy NO<sub>x</sub>. There are no increases to the facility's permitted annual emissions.

7. COMPLIANCE STATUS:

As of October 14, 2022, there are no compliance issues with the facility. ECHO (<https://echo.epa.gov/detailed-facility-report?fid=110012414985>) shows no air violations identified as of March 31, 2022.

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?

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. The emission increases from this modification are below the significant emission rates.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-02	CO TRS VOC	PSD
SN-04	NO <sub>x</sub> opacity SO <sub>2</sub>	NSPS D
SN-02	NO <sub>x</sub> PM <sub>10</sub> SO <sub>2</sub>	NSPS Db
SN-13 & SN-30a-f	NA (records only)	NSPS Dc
SN-24, 25, 26, 27F, 28, 31, and 32	VOC	NSPS Kb
SN-02, 03, 05, 10, & 15	TRS	NSPS BB
SN-01	TRS PM*	NSPS BBa
SN-44 & SN-45	CO VOC NO <sub>x</sub>	NSPS JJJ
SN-05, 06, 08 10, & 15	HAPs (methanol)	NESHAP S
SN-01, 02, & 03	HAPs (methanol)	NESHAP MM
SN-11a, 11b, & 34	Organic HAPs	NESHAP JJJ
SN-42, SN-43, &	There are no specific emission	NESHAP ZZZZ

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-45, & SN-47	limits or pollutants identified, but the rules generally regulate HAPs	
SN-47	NOx, PM	NSPS III
SN-04 & SN-13	There are no specific emission limits or pollutants identified, but the rules generally regulate HAPs	NESHAP DDDDD**

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
SN-47	Issuance of Permit #0271-AOP-R25	N/A	N/A	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.)

If yes, are applicable requirements included and specifically identified in the permit?  
 If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

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
01, 02, 03	PM/PM <sub>10</sub>	Applicable monitoring requirements under NESHAP Subpart MM are more stringent than CAM
05, 06, 08, 10, & 15	HAPs (methanol)	Applicable monitoring requirements under NESHAP Subpart S are more stringent than CAM
05	SO <sub>2</sub>	Scrubber flow and pH will be measured in 3-hour blocks and averaged across a 24-hour period.
12	PM/PM <sub>10</sub>	Opacity will be measured weekly using EPA Method 9.

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.

1<sup>st</sup> 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/m<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acetaldehyde	45.0	TLV > 1, total < 10 tpy		YES
Acrolein	0.230	0.0252	0.1936	NO

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Antimony	0.5	0.055	0.001	YES
Arsenic	0.01	0.0011	0.0015	NO
Beryllium	0.00005	5.5E-06	6.7E-04	NO
Cadmium	0.01	0.0011	0.00237	NO
Chlorine (Cl <sub>2</sub> )	0.290	0.0319	0.3525	NO
Chromium	0.5	0.0550	0.0056	YES
Chromium VI	0.0002	0.00002	0.00172	NO
Cobalt	0.02	0.0022	0.0003	YES
Formaldehyde*	1.5	0.165	1.54	NO
Hydrochloric Acid (HCl)	2.98	0.3282	16.40	NO
Lead	0.05	0.0055	0.0728	NO
Manganese	0.02	0.0022	0.0255	NO
Mercury	0.025	0.0028	0.0008	YES
Methanol	262.1	28.83	149.97	NO
Nickel	0.1	0.011	0.008	YES
Phosphorus	0.1	0.011	0.081	NO
Selenium	0.2	0.022	0.002	YES
Acetone	593.6	65.29	4.58	NO (>10 tpy)
Ammonia	17.4	1.915	17.97	NO
Chlorine Dioxide	0.276	0.0304	1.34	NO
Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	0.803	0.0883	2.56	NO
Total Reduced Sulfur (TRS)	See speciated compound list below.			
H <sub>2</sub> S	1.39	0.1533	7.10	NO

\* Formaldehyde's TLV used from 1998 Steve Patrick memo.

2<sup>nd</sup> 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 ( $\mu\text{g}/\text{m}^3$ ) = 1/100 of Threshold Limit Value	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
Acrolein	2.29	1.25	YES
Arsenic	0.1000	0.0003	YES
Beryllium	0.0005	0.0001	YES
Cadmium	0.1000	0.0006	YES
Chlorine (Cl <sub>2</sub> )	2.90	0.49	YES
Chromium VI	0.0020	0.0004	YES
Formaldehyde	15.0	10.1	YES
Hydrochloric Acid (HCl)	29.8	0.53	YES
Lead	0.50	0.054	YES
Manganese	0.200	0.015	YES
Methanol	2621	1968	YES
Phosphorus	1.00	0.06	YES
Acetone	5936	14.98	YES
Ammonia	174.13	169.9	YES
Chlorine Dioxide	2.76	1.86	YES
Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	8.02	0.91	YES
H <sub>2</sub> S	13.94	36.63	NO*

\* This modeling includes sources subject to NSPS BB. See next section for assessment of the facility using ambient standards pursuant to A.C.A. §8-3-103.

a) H<sub>2</sub>S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation because they are governed by federal standards. Refer to the Arkansas Code for details.

Is the facility exempt from the H<sub>2</sub>S Standards? N

Sources at this facility subject to NSPS BB are deemed compliant with H<sub>2</sub>S standards mentioned above. See A.C.A. §8-3-103(d)(2)(b).

Sources not subject to NSPS BB or the other technology standards in the statute were modeled for comparison. The facility is in a non-residential area, but it meets the stricter standard for residential areas (80 ppb) as well.

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H <sub>2</sub> S	20 parts per million (5-minute average*)	192 ppb (0.192 ppm < 20 ppm)	Y
	100 parts per billion (8-hour average) nonresidential area	60.3 ppb	Y

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

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

C<sub>p</sub> = 5-minute average concentration

C<sub>m</sub> = 1-hour average concentration

t<sub>m</sub> = 60 minutes

t<sub>p</sub> = 5 minutes.

ppm of H<sub>2</sub>S = concentration in mg/m<sup>3</sup> x 24.45 / (34.08 g/mol).

ppb = 1,000 \* ppm

15. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
01	<p>NCASI TB 1020, Table 4.13 low end, filt only</p> <p>2015 renewal, verified by 2015 stack test filt+cond</p> <p>2000 stack test, +50% factor of safety (FS)</p> <p>NCASI TB 1020, Table 4.13, max</p> <p>Stack testing</p> <p>2007 stack test, avg, burning pet coke</p>	<p>lb/ton CaO:</p> <p>0.350 PM 0.367 PM<sub>10</sub></p> <p>0.296 PM<sub>2.5</sub> PM/PM<sub>10</sub>/PM<sub>2.5</sub> (conservative limits kept from R20)</p> <p>0.285 SO<sub>2</sub></p> <p>0.24 VOC</p> <p>1.10 CO</p> <p>1.56 NO<sub>x</sub></p>	None	--	<p>65.0 MMBtu/hr natgas</p> <p>Pet Coke consumption: 3,083 lb/hr 13,505 tpy HHV 15,000 Btu/lb</p> <p>Lime Production: 11.54 ton CaO/hr 101,105 ton CaO/yr</p> <p>See permit for specific averaging times</p>
01	NSPS BBa	8 ppm TRS	None	--	<p>TRS based on maximum NSPS limit. 1 ppm = 1.471 mg/m<sup>3</sup> per regulation. 8 ppm x 1.471 mg/m<sup>3</sup>/ppm x 1 lb/453,592 mg x 1 m<sup>3</sup>/35.315 ft<sup>3</sup> x 24,727 dscfm x 60 min/hr x 1 hr/11.54 ton CaO = 0.09 lb/ton CaO.</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
01	<p>NCASI TB 1050, Table 4.56, max</p> <p>NCASI TB 1050, Table 4.56, mean or only value</p> <p>NCASI TB 1050, Table 4.59, mean</p>	<p>lb/ton CaO: 6.81E-7 Sulfuric Acid</p> <p>6.06E-3 Acetone 2.30E-3 Acrolein 9.36E-3 Formaldehyde 9.44E-2 Methanol 4.99E-2 Total Other Organic HAPs</p> <p>6.13E-3 Lead 8.10E-3 Total Other Trace Metal HAPs</p>	None	--	Lime Production: 11.54 ton CaO/hr 101,105 ton CaO/yr
02	Test data	<p>gr/dscf: 0.0294 PM/PM<sub>10</sub></p> <p>lb/ton BLS: 0.3802 PM<sub>2.5</sub></p>			<p>Flue Gas Flow Rate @ 8% O<sub>2</sub>: 206,625 dscfm</p> <p>Black Liquor Firing Rate: 62.5 ton BLS/hr, 520,125 ton BLS/yr</p>
02	NCASI TB 1020, Table 4.12 mean	lb/ton BLS: 0.15 VOC			Black Liquor Firing Rate: 62.5 ton BLS/hr, 520,125 ton BLS/yr

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
02	BACT Limit	<p>BACT: 86 ppm<sub>dv</sub> SO<sub>2</sub></p> <p>Short-term factor set at 61 ppm<sub>dv</sub></p> <p>Annual factor set at 11.3 ppm<sub>dv</sub></p>			<p>Flue Gas Flow Rate at 8% O<sub>2</sub>: 206,625 dscfm</p> <p>Mol. Wt SO<sub>2</sub>: 64 or 64.066 lb/lbmol</p> <p>Lb/hr = 206,625 dscfm x 60 min/hr x (61 ppm<sub>dv</sub> / 10<sup>6</sup>) x 14.7 psia x 64 lb/lbmol MW / [10.73 psia-cf/lbmol-R x (459.6 + 68 R)]. Tpy = same except using annual factor x 8760 hr-ton / 2000 lb-yr</p>
02	BACT Limit	<p>Short-term BACT 300 ppm<sub>dv</sub> CO</p> <p>Annual BACT 200 ppm<sub>dv</sub> CO</p>			<p>Flue Gas Flow Rate at 8% O<sub>2</sub>: 206,625 dscfm</p> <p>Mol. Wt CO: 28 lb/lbmol</p> <p>Lb/hr = 206,625 dscfm x 60 min/hr x (ppm<sub>dv</sub> limit / 10<sup>6</sup>) x 14.7 psia x 28 lb/lbmol MW / [10.73 psia-cf/lbmol-R x (459.6 + 68 R)] Tpy = same except using annual factor x 8760 hr-ton / 2000 lb-yr</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
02	BACT Limit	Short-term BACT 110 ppm <sub>dv</sub> NO <sub>x</sub>  Annual limit set at 86.5 ppm <sub>dv</sub> NO <sub>x</sub>			Flue Gas Flow Rate at 8% O <sub>2</sub> : 206,625 dscfm  Mol. Wt NO <sub>2</sub> : 46 lb/lbmol  Lb/hr = 206,625 dscfm x 60 min/hr x (ppm <sub>dv</sub> limit/ 10 <sup>6</sup> ) x 14.7 psia x 46 lb/lbmol MW / [10.73 psia-cf/lbmol-R x (459.6 + 68 R)]. Tpy = same except using annual factor x 8760 hr-ton / 2000 lb-yr
02	BACT Limit	Short-term BACT 5 ppm <sub>dv</sub> TRS  Annual limit set at 3 ppm <sub>dv</sub> TRS			Flue Gas Flow Rate at 8% O <sub>2</sub> : 206,625 dscfm  Mol. Wt H <sub>2</sub> S: 34 lb/lbmol  Lb/hr = 206,625 dscfm x 60 min/hr x (ppm <sub>dv</sub> limit/ 10 <sup>6</sup> ) x 14.7 psia x 34 lb/lbmol MW / [10.73 psia-cf/lbmol-R x (459.6 + 68 R)]. Tpy = same except using annual factor x 8760 hr-ton / 2000 lb-yr

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
02	<p>NCASI TB 1050, Tables 4.52 and 4.54, mean or max</p> <p>NCASI TB 1050, Table 4.53, mean</p>	<p>lb/ton BLS: 1.47E-2 Formaldehyde 2.51E-1 HCl 2.11E-5 Lead 4.14E-2 Methanol 3.27E-2 Total Other HAP 8.66E-3 Acetone 1.96E-2 Sulfuric Acid</p> <p>3.48E-2 H<sub>2</sub>S</p>			<p>Black Liquor Firing Rate: 62.5 ton BLS/hr, 520,125 ton BLS/yr</p>
03	<p>Test Data</p>	<p>lb/ton BLS: 0.113 PM/PM<sub>10</sub> 8.64E-3 TRS</p> <p>lb/hr: 0.71 Methanol</p>			<p>Maximum of 2015, 2016, 2017, and 2018 stack tests (PM) or 2018 stack test (TRS), plus 40% safety factor. At R24, these calculations were updated, but the facility asked to keep the previous limits which were more conservative than these.</p> <p>2000 stack test (methanol) plus 25% safety factor.</p> <p>Black Liquor Firing Rate: 62.5 ton BLS/hr, 520,125 ton BLS/yr</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
03	<p>NCASI TB 884 Table 4.15 mean</p> <p>NCASI TB 1020, Table 4.15 mean</p> <p>NCASI TB 1050, Table 4.61 mean, Table 4.63 mean</p> <p>NCASI TB 1050, Table 4.62 mean</p>	<p>lb/ton BLS: 0.033 NO<sub>x</sub></p> <p>0.015 SO<sub>2</sub> 0.066 VOC 0.013 CO</p> <p>1.25E-4 Acrolein 1.32E-3 Formaldehyde 2.68E-6 Lead 5.69E-3 Total Other HAPs 1.60E-3 Acetone 1.42E-1 Ammonia</p> <p>3.51E-3 Dimethyl disulfide 2.15E-3 Dimethyl sulfide 7.89E-3 H<sub>2</sub>S 2.98E-3 Methyl Mercaptan</p>			<p>Black Liquor Firing Rate: 62.5 ton BLS/hr, 520,125 ton BLS/yr</p> <p>Stack data says 4.3 tpy TRS max. NCASI TB 1050 Table 4.62 was used to create ratios of components to overall TRS. 40% SF.</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
04	NSPS Subpart D (fuel oil)	lb/MMBtu: 0.1 PM 0.8 SO <sub>2</sub> 0.3 NO <sub>x</sub>			479 MMBtu/hr / 0.137 MMBtu/gal diesel = 3496.4 Mgal/hr. 3,496.4 Mgal/hr x 225 hr/yr = 786,678.8 gal/yr.
	NSPS Subpart D (natural gas)	lb/MMBtu: 0.2 NO <sub>x</sub>			Assumes PM <sub>10</sub> is equal to NSPS Subpart D PM limit.
	AP-42 (fuel oil)	lb/Mgal: 0.3 VOC 6.0 CO Various HAPs			CEMS used for SO <sub>2</sub> and NO <sub>x</sub> compliance. Facility chose these annual limits.
	AP-42 (natural gas)	lb/MMscf: 9.2 PM 0.7 SO <sub>2</sub> 6.6 VOC 101 CO Various HAPs and other non-criteria			VOC and CO based on 8760 worst case (nat gas).  Periodic testing used for CO compliance  All AP-42 based criteria emissions are permitted with an additional 20% safety factor

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
05	Average of 2015 & 2016 Stack Test plus 50% safety factor	ADTUBP/hr: 0.061 PM/PM <sub>10</sub>			Maximum throughput: 45 ADTP/hr 347,334 ADTP/yr
	Average of 2015 Stack Test plus 50% safety factor	0.156 SO <sub>2</sub> 2.16 NO <sub>x</sub>			VOC factor has 3 standard deviations added to it. CO factor has 1 standard deviation added to it.
	NCASI TB 1050, Table 4.4, mean	0.039 VOC 0.42 CO			At R24, these calculations were updated, but the facility asked to keep the previous limits which were more conservative than these, except to decrease the TRS, Methanol, and Total HAP limits based on the NCASI factors.
	NCASI TB 1050, Table 4.36, mean	4.55E-4 TRS			
	NCASI TB 1050, Table 4.35, max or mean	7.92E-5 Formaldehyde 4.55E-3 Methanol 1.24E-3 Total Other HAPs			

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
06	<p>NCASI TB 1020 Table 4.9 mean</p> <p>TB1050 Table 4.1 mean</p> <p>TB 1050 Sum of speciated compounds from Table 4.4 mean</p> <p>TB1050 Table 4.1, mean and Table 4.2, mean and max</p>	<p>lb/ODTUBP: 1.03E-1 VOC 8.1E-1 CO</p> <p>lb/ADTUBP: 5.14E-3 Acetone</p> <p>1.20E-2 TRS</p> <p>2.84E-4 Acrolein 1.16E-3 Formaldehyde 1.58E-2 HCl 1.62E-1 Methanol 2.20E-2 Total Other HAP</p>			<p>Maximum throughput: 45 ADTP/hr 347,334 ADTP/yr Or 40.5 ODTP/hr 312,601 ODTP/yr</p> <p>NCASI TB1020 Tbl 4.9: CO factor in lb/ODTUBP = max of <math>0.18 * X + 0.45</math> (softwoods), and <math>-0.03 * X + 0.69</math> (hdwoods), where X = % ClO<sub>2</sub> applied total in lb ClO<sub>2</sub> per 100 lb ODTUBP. X = 200.</p>
07	<p>Test data</p> <p>NCASI TB 1050, Table 4.9, mean</p> <p>NCASI TB 1050, Table 4.89, mean</p>	<p>lb/ton ClO<sub>2</sub>: 0.235 Cl<sub>2</sub> 0.894 ClO<sub>2</sub> (plus 20%)</p> <p>lb/ODTUBP: 9.40E-3 VOC</p> <p>lb/ton ClO<sub>2</sub>: 1.20E-3 Formaldehyde 4.48E-2 Methanol 1.58E-2 Total Other HAPs</p>			<p>These test results are permitted with an additional 20% safety factor.</p> <p>41 ODTUBP/hr, 312,601 ODTUBP/yr.</p> <p>1.25 tons ClO<sub>2</sub>/hr, 10,950 tons ClO<sub>2</sub>/yr. VOC emission factor is based on the sum of all HAP emissions</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
08	<p>2015 modeling by NCASI using Water9</p> <p>Test data</p>	<p>8.82 g/s Methanol</p> <p>0.1 lb/hr 0.4 tpy Chloroform</p>			<p>Brownstock throughput: 40.5 ODTUBP/hr, 312,601 ODTUBP/yr.</p> <p>VOC = methanol + chloroform.</p> <p>8.82 g/s x 1 lb/453.6g x 3,600 sec/hr x 1+12% factor of safety = 78.19 lb/hr Methanol. 78.19 lb/hr x 8760 hr/yr x 1 ton/2000 lb = 342.5 tpy methanol.</p>
10	<p>NCASI TB 1020 Table 4.6 mean, vacuum drum</p> <p>NCASI TB 1050 Tables 4.11, 4.12, and 4.13, mean</p>	<p>lb/ADTUBP: 4.99E-1 VOC</p> <p>8.65E-5 Acrolein 1.73E-4 Formaldehyde 8.62E-2 Methanol 5.95E-3 Total Other HAP 5.61E-2 Acetone 1.31E-1 TRS</p>			<p>45 ADTUBP/hr 347,334 ADTUBP/yr 8760 hr/yr.</p> <p>TRS limit kept from R23, because old limit is more conservative.</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
11a & 11b	NCASI TB 1020, table 8.1, median  NCASI TB 677, Table IX.A.1, hardwood high-density pulp storage tank vent (OV3)	lb/ADTFP: 6.9E-02 VOC  0.86 lb VOC/hr per chest			Permitted VOC emissions include two chests located inside the board machine. VOC = paper machine + blend chest + machine chest.  For paper machine, 55.0 ADTFP/hr. 365,000 ADFTP/yr. For chests, 8,760 op hr/yr max.
11a & 11b	site-specific factor based on past usages  NCASI TB 1050, table 4.86, median or max	lb/ADTFP: 1.01E-1 Ammonia  2.04E-3 Acrolein 2.30E-3 Formaldehyde 3.91E-2 Methanol 3.67E-2 Total Other HAPs 1.20E-2 Acetone			55.0 ADTFP/hr. 365,000 ADFTP/yr.
12	Vendor guarantee	0.01 gr/ascf PM/PM <sub>10</sub>			1500 acfm max 8760 op hr/yr
13	BACT limit  AP-42 Chapter 1.4, Tables 1.4-1 and 1.4-2	lb/MMBtu: 0.05 NO <sub>x</sub>  lb/MMscf: 7.6 PM/PM <sub>10</sub> 0.6 SO <sub>2</sub> 5.5 VOC 84 CO Various HAPs and other non-criteria			86 MMBtu/hr natural gas boiler. HHV 1020 Btu/scf. 0.084 MMcf/hr. 8760 op hr/yr max, 738.6 MMcf/yr.

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
14F	NCASI TB 723 and mass balance	<p>lb/Tdw: 0.05 TOC (hardwood)</p> <p>0.06 TOC (hdwd sawdust)</p> <p>2.16 TOC (softwood)</p> <p>2.76 TOC (softwd sawdust)</p>			<p>Maximum pulping material throughput: 1,425,500 tpy (wet). 320k tpy max Softwood Chips, 51.3% moisture. 55k tpy max Softwood Sawdust, 10% moisture. Remainder may be Hardwood Chips, 43.1% moisture, and Hardwood Sawdust, 10% moisture.</p> <p>Dry tpy chips = total wet tpy x % type of chips x (1-% moisture).</p> <p>VOC rate for softwood residuals is lb/Tdw x 136/120 to account for molecular weight of primary constituents—alpha and beta pinenes, 3-carene, and limonene.</p> <p>VOC rate for hardwood residuals is lb/Tdw x 36/12 to account for mol wt of primary constituents—low wt alcohols, aldehydes, and ketones.</p> <p>For softwood, onsite emissions are 1 - (1.1 lb/Tdw / 2.16 lb/Tdw) = 49.1% of total.</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
14F	Control of Open Fugitive Dust Sources (EPA-450/3-98-008), Equation 4-9	0.5% silt content 105 wet days  windspeed over 12 mph for 15.06% of time  lb/day-acre: 0.629 PM			It is assumed that 50% of PM is PM <sub>10</sub> .  Acreage of chips: Hardwood 1.624 Softwood 0.773 Sawdust 0.301 Total 2.697 ac
15	NCASI TB 1020, Table 4.2 mean  NCASI TB 1050, Table 4.31 mean  NCASI TB 1050, Table 4.30 mean	lb/ton chip: 1.20E-2 VOC  lb/ODT chip 3.63E-4 Acetone 1.70E-4 Dimethyl Disulfide 7.53E-3 Dimethyl Sulfide 5.60E-5 Methyl Mercaptan Summed for TRS  9.77E-6 Acrolein 2.20E-5 Formaldehyde 6.23E-1 Methanol 1.44E-3 Total Other HAP 3.63E-4 Acetone			225 ton chip/hr 1,971,000 ton chip/hr  Expected: 80% hardwood chips, 43% moisture in HW. 20% softwood chips, 51% moisture in SW. But 100% HW chips assumed, worst case. 225 t/hr x (1-43%) = 128.3 ODT chip/hr. 1,123,470 ODT chip/yr.  VOC factor is based on tons of chips, including moisture. All other factors are based on ODT Chips (Oven Dried Tons of Chips), which excludes moisture.  VOC calc is lower than permitted limit but facility will keep the older, more conservative limit.

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
16F & 27F	NCASI TB 1020, Table 4.3 min	lb/chest-hour: 0.86 VOC plus 20%			VOC emissions are permitted with an additional 20% safety factor. SN-16F = 9 chests. SN-27F = 1 chest. 2 additional chests located inside SN-11a and SN-11b.
17F	EPA's LandGEM  AP-42 Chapter 13.2.4, Equation 1	LandGEM output: VOC HAPs  lb/ton: 0.00112 PM 0.00053 PM <sub>10</sub>			Annual Deposits = 100,000 short tons every year until closure. Because of the cumulative nature of LandGEM calcs, this is a long-term average, but site cleanups may result in a year somewhat larger than normal.  NMOC = 5,561 m <sup>3</sup> /yr in 2031  U = 7.24 M = 4.8%

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
21, 22, 28, & 31	<p>NCASI TB 1050 Table 4.37, mean or median</p> <p>NCASI TB 1050 Table 4.38, mean Speciated TRS</p>	<p>lb/hr/tank: 2.92E-4 Acrolein 1.21E-4 Formaldehyde 0.607 Methanol 0.106 Total Other HAPs 0.714 VOC 3.21E-2 Acetone</p> <p>1.48E-1 Dimethyl Disulfide 3.87E-1 Dimethyl Sulfide 1.99E-2 Hydrogen Sulfide 1.28E-1 Methyl Mercaptan</p>			<p>8,760 op hr/yr.</p> <p>The NCASI factors are lb /hr per tank, not based on throughput or capacity of tank.</p> <p>VOC factor used was the total of all HAPs, because it was larger than the NCASI factor for VOC.</p>
24	TANKS	<p>Working loss 616.71 lb/yr Breathing loss 323.03 lb/yr</p>			<p>Loss is 100% methanol, so 100% VOC.</p> <p>500,000 gal/yr max throughput, 35,646 gal capacity = 14 turnovers per year. Fills in 1 hour.</p> <p>Breathing loss = <math>323.03/8760 = 0.04</math> lb/hr.</p> <p>Working loss max = <math>(616.71 \text{ lb/yr} \times 35,646 \text{ gal/hr}) / (14 \text{ turnovers/yr} \times 35,646 \text{ gal/turnover}) = 44.05</math> lb/hr.</p> <p>Kept older limit at R24.</p>

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
25	NCASI TB 1050 Table 4.43, max  NCASI TB 1050 Table 4.44, max Speciated TRS	lb/hr/tank: 3.65 Methanol 7.70E-2 Total Other HAPs 3.85 VOC 1.201E-1 Acetone  4.18E-2 Dimethyl Disulfide 8.31E-3 Dimethyl Sulfide 1.64E-2 Methyl Mercaptan			8,760 op hr/yr.  The NCASI factors are lb /hr per tank, not based on throughput or capacity of tank.  The VOC factor is the sum of the speciated factors found in the NCASI table.
26	NCASI TB 1050 Table 4.41, max  NCASI TB 1050 Table 4.42, max Speciated TRS	lb/hr/tank: 3.10E-2 Methanol 3.30E-2 VOC 1.00E-2 Acetone  5.72E-2 Dimethyl Disulfide 2.39E-1 Dimethyl Sulfide 9.19E-3 Hydrogen Sulfide 5.84E-1 Methyl Mercaptan			8,760 op hr/yr.  The NCASI factors are lb /hr per tank, not based on throughput or capacity of tank.  The VOC factor is the sum of the speciated factors found in the NCASI table.
29	--	--	--	--	NCG Collection System emissions are accounted for in SN-01 and SN-05

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
30a-f	AP-42 Chapter 1.4, Tables 1.4-1, 2, and 3	lb/MMscf: 7.6 PM/PM <sub>10</sub> 0.6 SO <sub>2</sub> 5.5 VOC 84 CO 100 NO <sub>x</sub>  7.50E-2 Formaldehyde  2.0E-4 Arsenic 1.2E-5 Beryllium 1.1E-3 Cadmium 1.4E-3 ChromiumVI 5.0E-4 Lead 3.8E-4 Manganese			Maximum number of boilers used = 6. Maximum heat input capacity per boiler = 100 MMBtu/hr. HHV 1,020 Btu/scf.
32	NCASI TB 1050 Table 4.39  NCASI TB 1050 Table 4.40, mean Speciated TRS	lb/hr/tank: 1.78E-5 Acrolein 5.23E-4 Formaldehyde 0.381 Methanol 8.57E-2 Total Other HAPs 0.110 VOC 3.80E-2 Acetone  4.19E-2 Dimethyl Disulfide 2.43E-1 Dimethyl Sulfide 7.88E-2 Hydrogen Sulfide 2.75E-1 Methyl Mercaptan			8,760 op hr/yr.  The NCASI factors are lb /hr per tank, not based on throughput or capacity of tank.  VOC factor is the total of all HAPs, because it was larger than the NCASI factor for VOC.
33	Vendor guarantee	0.01 gr/cfm PM/PM <sub>10</sub>			3,000 cfm 8,760 hr/yr

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
34	Site-specific factor, based on usage per quantity of mat'l produced (lb/ton) in 2006  NCASI TB 701, Table 18	lb/ADTFP: 2.69E-01 Ammonia  8.8E-2 Terpenes 8.9E-4 MIBK 1.8E-3 Acrolein 9.5E-3 Formaldehyde 4.1E-2 Methanol 1.66E-2 Total Other HAP 3E-3 MEK			VOC emission factor is based on the sum of all HAP and terpenes emissions.  All SN-34 emissions are permitted with an additional 20% safety factor.  11.00 ADTFP/hr, 10,000 ADTFP/yr. 8,760 op hr/yr.
36	AP-42 Chapter 13.2.1, Equations 1 and 2	Hourly, lb/VMT: 0.1456 PM 0.0291 PM <sub>10</sub>  Annual, lb/VMT: 0.1351 PM 0.0270 PM <sub>10</sub>	--	--	10.97 VMT/hr. 76,652 VMT/yr. Recalculated at R24, but older, more conservative limits kept.
37	AP-42 Chapter 13.2.2, Equations 1a and 2	Hourly, lb/VMT: 5.4841 PM 1.3408 PM <sub>10</sub>  Annual, lb/VMT: 2.4040 PM 0.5878 PM <sub>10</sub>	--	--	2.65 VMT/hr. 14,941 VMT/yr. Recalculated at R24, but older, more conservative limits kept.
38	NCASI TB 1050 Table 4.79, max	lb/ ton CaO: 1.3E-1 Methanol 4.59E-4 Total Other HAPs 1.5E-3 Acetone  TRS: 2.00E-4 Dimethyl Disulfide 4.20E-4 Methyl Mercaptan			Lime Production: 11.54 ton CaO/hr 101,105 ton CaO/yr  VOC is the total of all HAP.

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
39	NCASI TB 1050 Table 4.81, max	lb/ ton CaO: 5.9E-5 Acrolein 3.3E-2 Methanol 2.24E-3 Total Other HAPs 1.4E-3 Acetone			Lime Production: 11.54 ton CaO/hr 101,105 ton CaO/yr  VOC is the total of all HAP.  All TRS pollutants were non-detectable according to NCASI TB 1050, Table 4.81.
40	TANKS	VOC/Methanol: Working loss 2735.93 lb/yr Breathing loss 229 lb/yr	--	--	Conservatively assumes black liquor used as surrogate for soap. Methanol is the most predominant VOC from black liquor tanks, so all losses are assumed to be VOC and methanol.  8,942,500 gal/yr max throughput / 24,500 gal capacity = 365 turnovers/year. 1,020 gal/hr tank fill. Fills in 24.02 hours = calculated at absolute maximum.  Breathing loss = $229/8760 = 0.03$ lb/hr. Working loss max = $(2735.93 \text{ lb/yr} \times 1,020 \text{ gal/hr}) / (365 \text{ turnovers/yr} \times 24,500 \text{ gal/turnover}) = 0.34$ lb/hr. Rounded to 0.4 lb/hr.

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
42	AP-42 Chapter 3.3, Tables 3.3-1 and 3.3-2	lb/hp-hr: 2.2E-3 PM/PM <sub>10</sub> 2.05E-3 SO <sub>2</sub> 2.51E-3 VOC 6.68E-3 CO 3.1E-2 NO <sub>x</sub> 9.25E-5 Acrolein 1.18E-3 Formaldehyde 5.242E-3 Total Other HAP	N/A	N/A	CI emergency engine annual emissions based on 500 hours each. 7000 Btu/hp-hr. 62 hp, 0.434 MMBtu/hr.
43	AP-42 Chapter 3.2, Table 3.2-3	lb/MMBtu: 9.50E-3 PM 1.94E-2 PM <sub>10</sub> 5.88E-04 SO <sub>2</sub> 2.96E-02 VOC 3.51 CO 2.27 NO <sub>x</sub> Various HAPs and other non-criteria			4SRB NG emergency engine annual emissions based on 500 hours each. 2542.5 Btu/hp-hr. 111 hp, 0.282 MMBtu/hr.
44	AP-42 Chapter 3.2, Table 3.2-3  NSPS Subpart JJJ	lb/MMBtu: 9.50E-03 PM 1.94E-02 PM <sub>10</sub> 5.88E-04 SO <sub>2</sub>  g/hp-hr: 1.0 VOC 4.0 CO 2.0 NO <sub>x</sub>			4SRB NG emergency engine annual emissions based on 500 hours each. 2542.5 Btu/hp-hr. 224 hp, 0.570 MMBtu/hr.
45	AP-42 Chapter 3.2, Table 3.2-2  Vendor data	lb/MMBtu: 7.71E-05 PM 9.90E-03 PM <sub>10</sub> 5.88E-04 SO <sub>2</sub>  g/kW-hr: 0.11 VOC 0.89 CO 0.02 NO <sub>x</sub>			4SRB propane emergency engine annual emissions based on 500 hours each. 2542.5 Btu/hp-hr. 148 hp, 110.6kW, 0.376 MMBtu/hr.

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
46	AP-42 (1980 Edition) Section 10.3	lb/ton: 0.024 PM 0.0139 PM <sub>10</sub>	N/A	N/A	100 ton/hr short-term maximum capacity  364,000 ton/yr annual maximum capacity
47	NSPS III	<u>in g/Hp-hr</u> PM/PM <sub>10</sub> : 0.15 CO: 2.6 NMHC+NO <sub>x</sub> : 3.0	N/A	N/A	CI emergency engine 7000 Btu/Hp-hr 311 Hp 2.177 MMBtu/hr 500 hr/yr
	AP-42, 3.3-1 & 3.3-2	SO <sub>2</sub> : 0.002 lb/Hp-hr Total HAPs: 6.68E-03 lb/MMBtu			
	Manuf. Data	<u>in g/Hp-hr</u> VOC: 0.1 NO <sub>x</sub> : 2.61			

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01	PM/PM <sub>10</sub> PM <sub>2.5</sub>	5, 201A 202	5-yr	Compliance mechanism; NESHAP MM
01	SO <sub>2</sub>	6C	5-yr	Compliance mechanism
01	VOC	25A	5-yr	Compliance mechanism
01	CO	10	5-yr	Compliance mechanism
01	NO <sub>x</sub>	7E	5-yr	Compliance mechanism
02	PM PM <sub>10</sub> & PM <sub>2.5</sub>	5 5 or 201A w/202	Annually until 2 passing tests then every 5 years	Compliance mechanism; NESHAP MM
03	PM/PM <sub>10</sub>	5, 201A	5-yr	Compliance mechanism; NESHAP MM
03	TRS	16B	Annually	§19.804(B)

SN	Pollutants	Test Method	Test Interval	Justification
04	CO	10	5-yr	Compliance mechanism
05	SO <sub>2</sub>	6C	5-yr	Compliance mechanism
13	NO <sub>x</sub>	7E	Within 180 days	Compliance mechanism
02	PM <sub>10</sub> PM <sub>2.5</sub>	201A & 202	Annually	A reasonable possibility exists under paragraph (r)(6) of 40 CFR §52.21 due to projected actual emissions increase of at least 50 percent of the amount that is a “significant emissions increase,” as defined under 40 CFR §52.21(b)(40).
03	SO <sub>2</sub> NO <sub>x</sub> H <sub>2</sub> S PM <sub>10</sub> PM <sub>2.5</sub>	6C 7E 16 5 & 202	5-yr	A reasonable possibility exists under paragraph (r)(6) of 40 CFR §52.21 due to projected actual emissions increase of at least 50 percent of the amount that is a “significant emissions increase,” as defined under 40 CFR §52.21(b)(40).
05	SO <sub>2</sub> NO <sub>x</sub>	6C 7E	5-yr	A reasonable possibility exists under paragraph (r)(6) of 40 CFR §52.21 due to projected actual emissions increase of at least 50 percent of the amount that is a “significant emissions increase,” as defined under 40 CFR §52.21(b)(40).
10	H <sub>2</sub> S	16	5-yr	

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	NO <sub>x</sub>	CEMS	Continuously	Y
	CO <sub>2</sub>	CEMS	Continuously	Y
	SO <sub>2</sub>	CEMS	Continuously	Y

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
	Opacity	COMS (during fuel oil)	Continuously	N
02	SO <sub>2</sub>	CEMS	Continuously	N
	CO	CEMS	Continuously	N
	NO <sub>x</sub>	CEMS	Continuously	N
	TRS	CEMS	Continuously	N
	H <sub>2</sub> S (59.4% of total TRS)	TRS CEMS	Continuously	N
02	Opacity	COMS	Continuously	N
01	TRS	CEMS	Continuously	N
01 & 03	Scrubber Pressure Drop (SN-01)	CPMS	Continuously	N
	Scrubber Liquid Flow Rate (SN-01)	CPMS	Continuously	N
	Scrubber Pressure Drop (SN-03)	CPMS	Continuously	N
	Scrubber Liquid Flow Rate (SN-03)	CPMS	Continuously	N
05	Temperature	Monitoring Device which measures and records the temperature at the point of incineration in the incinerator.	Continuously	N
05	Scrubber recirculation flow rate	Flow meter	3-hour block average	N
05	Scrubber recirculation pH	pH meter	3-hour block average	N
06	pH of the oxidation/reduction potential of the gas scrubber effluent	CMS	Continuously	N
06	gas scrubber vent gas inlet flow rate	CMS	Continuously	N
06	gas scrubber liquid influent flow rate	CMS	Continuously	N
06	chlorine outlet concentration, in lieu of other monitored items for SN-06	CMS	N/A	N

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
08	see Plantwide Condition 72 of the permit	testing grab samples	as required by 40 CFR Part 63, Subpart S	N
closed vent systems	see Plantwide Conditions 35 through 92	visual inspections and leak detection tests	as required by 40 CFR Part 63, Subpart S	N

## 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)
13	Make, Model, Year of Construction, & Capacity	NSPS Subpart Dc applicability	When brought on site	Y
	Natural Gas Combusted (If boiler is subject to Dc)	Amount Combusted per Day	Daily	Y
14F	Pulping Material Processed	1,425,500 wet tons wood chips and sawdust/12 months 320,000 wet tons softwood chips/12 months 55,000 wet tons softwood sawdust/12 months	Monthly	Y
04	No. 2 Fuel Oil	786,678 gal/yr	Monthly	N
02	Black liquor solids fired	520,125 tons/12 months	Monthly	Y
	Sulfur Content Certification	Low Sulfur Fuel Oil	Daily	Y
01	Quicklime production limit	101,105 tons/12 months	Monthly	Y
24	Methanol Throughput	500,000 gal/12 months	Monthly	Y
		Subpart Kb	Maintain	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of that VOL	Requirement	records for 2 years	
05	Scrubber flow	400 gal/min (min)	Daily	Y
	Scrubber pH	9.0 (max)	Daily	Y
Facility	Air dried finished product	401,500 OMT from onsite virgin pulp, purchased pulp, and recycled paper & 365,000 tons/12 months (virgin pulp only)	Monthly	Y
30 a-f	Total annual fuel	520 million/12 months	Monthly	N
	Daily fuel	Subpart Dc Requirement	Daily	N
17F	Tons of waste per 12 months and 60 months (5 years)	150,000 tons/12 months, AND 500,000 tons/60 months	Monthly	Y
01	Pet coke usage	13,505 tons per 12-month	Monthly	Y
	Pet coke Sulfur content	7% by weight (max)	Supplier Certification	N
34	Air dried finished product from Off Machine Coater	10,000 tons/12 months	Monthly	Y
Facility	Organic HAP emissions	4% of mass of coating materials applied	As Purchased	N
42, 43, 44, 45, & 47	Hours of operation	500 hours annually (each)	Monthly	Y
	Hours of operation and documentation for emergency	100 hr/yr for maintenance and readiness testing; 50 hr/yr for non-	As needed	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	hours	emergency but counted as part of the 100 hr/yr above		
01, 02, 03, & 05	Annual NO <sub>x</sub> Emissions (tpy on a calendar basis)	N/A	Annually	N
01, 02, 03, 05, 14F, & 37	Annual PM <sub>2.5</sub> Emissions (tpy on a calendar basis)	N/A	Annually	N
02, 03, 04, & 05	Annual SO <sub>2</sub> Emissions (tpy on a calendar basis)	N/A	Annually	N
	Annual NO <sub>x</sub> Emissions (tpy on a calendar basis)	N/A	Annually	N
02, 03, 05, & 10	Annual H <sub>2</sub> S Emissions (tpy on a calendar basis)	N/A	Annually	N
02, 03, 04, 05, 14F, 17F, 36, & 37	Annual PM Emissions (tpy on a calendar basis)	N/A	Annually	N
	Annual PM <sub>10</sub> Emissions (tpy on a calendar basis)	N/A	Annually	N
	Annual PM <sub>2.5</sub> Emissions (tpy on a calendar basis)	N/A	Annually	N
04 & IA-1	Annual NO <sub>x</sub> emissions (tpy on a calendar basis)	212.1 tpy	Annually	N
46	Tons of logs processed	364,000 tons per 12-month rolling period	Monthly	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
04	5 % 20 %	Natural gas fuel only NSPS Subpart D (fuel oil)	COMS when combusting fuel oil; otherwise, natural gas only
13	5 %	natural gss fired	Natural gas only
02	20 %	NSPS Subpart BB allows 35% but Reg. 19 allows only 20% after 1972	COMS
03	20 %	carried over from previous permit	Weekly observation
01	20 %	carried over from previous permit	Weekly observation
05	20 %	natural gas fired	Weekly observation
01	5 %	fabric filter department guidance	Weekly observation
12	5 %	fabric filter department guidance	Daily observation
33	5 %	fabric filter department guidance	Daily observation
42 & 47	20 %	§19.503	Annual observation; Daily observation when in operation for more than 24 consecutive hours
43 & 44	5 %	natural gas fired	Natural gas only
45	5 %	propane gas fired	Propane only
46	20 %	Reg.19.503 and 40 C.F.R. § 52 Subpart E	Weekly observation

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 <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
5.9 MMBtu/hr Extruder Treater Combustion	A-1	0.20	0.02	0.14	2.13	2.54		0.14
Diesel Storage Tank (10,000 gal)	A-3			0.006			0.006	0.006
Caustic Storage Tanks	A-4			0			0	0
Laboratory Fume Hood	A-5			0.1			0.1	0.1
Truck and Railcar Loadouts	A-13	1.283 PM 0.607 PM <sub>10</sub>						
Knot Draining	A-13			0.12			0.06	0.12
Turpentine Tank (13,500 gal)	A-13			0.311				
Fuel Oil Day Tank (47,000 gal)	A-13			0.055				
Strong Liquor Tank	A-13			0.218			0.218	0.218
Heavy Liquor Tank	A-13			0.125			0.125	0.125
Gasoline Storage Tank (1,000 gal)	A-13			0.515			0.515	0.515
Green Liquor Stabilization Tank	A-13			0.071			0.056	0.071
Slaker	A-13			0.607			0.461	0.607
Extruder Winder Cyclone	A-13	0.299						
Board Machine South Cooling Tower – East Side (500 gpm)	A-13	0.063						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
Board Machine Middle Cooling Tower – East Side (430 gpm)	A-13	0.054						
Board Machine North Cooling Tower – East Side (724 gpm)	A-13	0.091						
Board Machine North Cooling Tower – West Side (200 gpm)	A-13	0.026						
Extruder Cooling Tower (585 gpm)	A-13	0.074						
Generator Cooling Tower (3,050 gpm)	A-13	0.319						
Pre-Evaporator Cooling Tower (3,600 gpm)	A-13	0.451						
Pulp-Mill HVAC Roof Cooling Tower (500 gpm)	A-13	0.063						
2 x Starch Storage Silos	A-13	0.902						
Polyethylene Silo	A-13	Due to the nature of the material (plastic beads), no emissions are expected from this silo.						
Chip Mill - Bark Storage Pile	A-13	0.029 PM 0.014 PM <sub>10</sub>						
Chip Mill - Bark Hog	A-13	0.004 PM 0.002 PM <sub>10</sub>						
Chip Mill - Chipper	A-13	0.016 PM 0.008 PM <sub>10</sub>						
Chip Mill - Rechipper	A-13	0.001 PM 0.001 PM <sub>10</sub>						
Chip Mill - Transfer Points	A-13	0.103 PM 0.049 PM <sub>10</sub>						

Source Name	Group A Category	Emissions (tpy)							
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs		
							Single	Total	
Category A-13 Total		3.778 PM 3.023 PM <sub>10</sub>		2.022				1.435	1.656

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 #
0271-AOP-R24



## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Clearwater Paper Corporation  
 Permit Number: 0271-AOP-R25  
 AFIN: 21-00036

\$/ton factor	27.27	Annual Chargeable Emissions (tpy)	3255.41
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	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	-1.8
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 condensable 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		290.6	290.5	-0.1	-0.1	290.5
PM <sub>10</sub>		254.8	254.7	-0.1		
PM <sub>2.5</sub>		111	111	0		
SO <sub>2</sub>		208.7	208.7	0	0	208.7
VOC		1156.8	1156.7	-0.1	-0.1	1156.7
CO		1338.5	1338.5	0		
NO <sub>x</sub>		1160.1	1158.5	-1.6	-1.6	1158.5
Lead	<input type="checkbox"/>	0.36	0.36	0		

