STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0287-AOP-R10 AFIN: 41-00002

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Domtar A.W. LLC
285 Highway 71 South
Ashdown, Arkansas 71822

3. PERMIT WRITER:

Charles Hurt

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Paper (except Newsprint) Mills
NAICS Code: 322121

5. SUBMITTALS:

5/20/2011

6. REVIEWER'S NOTES:

Domtar A.W. LLC. –Ashdown Mill (AFIN: 41-00002) operates a paper mill located at 285 Highway 71 South in Ashdown, Arkansas 71822. Domtar submitted an application to increase the amount of softwood used to produce pulp and paper products. The request did not propose to increase the mass amount of chips processed annually. The permit was modified to include emissions from a new chip pile and associated wood chip handling equipment. The modification triggered PSD review, and it resulted in the overall increase in permitted emissions of 11.4 tpy PM, 9.5 tpy PM_{10}, and 1,224.7 tpy VOC.

Prevention of Significant Deterioration

This facility is considered an existing major source under 40 CFR §52.21, Prevention of Significant Deterioration (PSD) regulations because the facility is a Kraft Pulp Mill (one of the 28 listed industrial source categories) and has the potential to emit more than 100

tpy of a regulated New Source Review (NSR) pollutant. The following PSD analysis pertains to the modification of the woodyard (SN-38) and the 1B pulp line to softwood. The modification of the woodyard involves new sources of particulate emissions that consist of a new chip pile, chip conveyors, stackers, reclaimers, and screens. All other changes occur at the 1B pulp line.

Modification PSD Applicability

The PSD applicability test for the project is presented below and is based on a test for past actual and future potential emissions for new equipment and a test for actual to future actual emissions for existing equipment. Since both types of emissions units (i.e. new and existing) are involved in the project, the determination whether or not a significant increase of a pollutant will be based on the hybrid test [40 CFR §52.21 (a)(2)(iv)(*f*)]. For certain sources and a given pollutant the increase is zero because there is no increase due to change of material (softwood vs. hardwood having the same documented emission factor), application of projected actual emissions, application of "could have accommodated" emissions, or a combination of these. The net result is either some value less than zero or zero itself.

Applicability Table 1

Source Description (Source No.)	Emission Rate Change (tpy)				
	PM	PM_{10}	$PM_{2.5}$	CO	TRS
Bleachplants (16/17/18)	-	-	-	0	0.15
ClO_2 Generators (20)	-	-	-	-	-
Effluent Treatment Lagoons (21)	-	-	-	-	-
Brownstock Washers (22)	-	-	-	-	0
Methanol Tank (23)	-	-	-	-	-
Woodyard (38)	19.03	13.33	9.83	-	-
Digesters 1A & 1B Chip Fill (40)	-	-	-	-	0.16
Pulp Dryer (37)	-	-	-	-	-
62 Paper Machine (44B)	-	-	-	-	-
63 Paper Machine (44C)	-	-	-	-	-
64 Paper Machine (44D)	-	-	-	-	-
61 Paper Machine (44A)	-	-	-	-	-
No. 2 Recovery Boiler (6)	0	-	-	0	
No. 3 Recovery Boiler (14)	0	-	-	0	
Total	19.03	13.33	9.83	0	0.31
PSD Significant Emission Rate	25	15	10	100	10
Is Netting Required?	No	No	No	No	No

"-" indicates that the pollutant is not emitted from this source

Applicability Table 2

Source Description (Source No.)	Emission Rate Change (tpy)				
	VOC	SO_2	NO_X	Lead	H_2SO_4
Bleachplants (16/17/18)	0	-	-	-	-
ClO_2 Generators (20)	-	-	-	-	-
Effluent Treatment Lagoons (21)	68.83	-	-	-	-
Brownstock Washers (22)	4.97	-	-	-	-
Methanol Tank (23)	0	-	-	-	-
Woodyard (38)	794.31	-	-	-	-
Digesters 1A & 1B Chip Fill (40)	0.79	-	-	-	-
Pulp Dryer (37)	4.29	-	-	-	-
62 Paper Machine (44B)	1.74	-	-	-	-
63 Paper Machine (44C)	2.53	-	-	-	-
64 Paper Machine (44D)	3.71	-	-	-	-
61 Paper Machine (44A)	1.40	-	-	-	-
No. 2 Recovery Boiler (6)	0	0	0	0	0
No. 3 Recovery Boiler (14)	0	0	0	0	0
Total	882.38	0	0	0	0
PSD Significant Emission Rate	40	40	40	0.6	7
Is Netting Required?	Yes	No	No	No	No

"-" indicates that the pollutant is not emitted from this source

No further consideration is given to total suspended particulate (PM), particulate matter less than 10 micron (PM_{10}), particulate matter less than 2.5 micron ($PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), total reduced sulfur (TRS), nitrogen oxides (NO_X), lead (Pb), or sulfuric acid mist (H_2SO_4) because the increase in the emission rates for those pollutants does not exceed their respective significant emission rates (SER). Although the proposed increase for the particulates are less than the SER, a reasonable possibility exists under paragraph (r)(6) of 40 CFR §52.21 due to projected actual emissions with consideration of could have accommodated emissions summing to greater than 50 percent of the SER.

Greenhouse gases (GHG) were evaluated for PSD applicability. The sources that emit GHG and that are potentially affected by this project are the No. 2 recovery boiler (SN-06), the No. 3 recovery boiler (SN-14), and the precipitated calcium carbonate (PCC) plant. For the recovery boiler the permittee demonstrated that an increase did not occur for any of the pollutants listed in the preceding applicability tables. The boiler utilization did not increase with this project. Therefore, there is not an increase at those sources for greenhouse gases either. For the PCC plant emission calculations for CO_2, the only expected greenhouse gas to be emitted from that source, and assuming that all the calcium carbonate is converted, the potential CO_2e emissions would be 14,454 tpy. Therefore, the modification will not result in an increase greater than 75,000 tpy CO_2e and PSD review for GHG was not triggered.

Since the emission increase associated with the modification exceeds the SER for volatile organic compounds (VOC), the contemporaneous changes must be considered in determining whether or not PSD review is triggered. The contemporaneous period extends from June 30, 2012 to January 1, 2007. The permittee identified eight modifications including the current modification at hand during this period.

Modification	Emission Rate Change (tpy)
	VOC
No.3 Recovery Boiler Air System/ESP Upgrade	10.1
No.3 Power Boiler Generating Bank/Economizer Replacement	2.6
No. 1 Power Boiler Generating Bank/Superheater Replacement	3.9
No. 10 Weak Black Liquor Tank Addition	3.75
No. 4 Package Boiler Installation	0.41
Softwood Mix (this project)	882.38
Kamyr (No. 2 Pulp line) chip bin and flash tank modifications	Decrease and Not Accounted
No. 2 Recovery Boiler Super Heater Replacement	Decrease and Not Accounted
Net Change	903.14
PSD Significant Emission Rate	40
Subject to PSD Review?	Yes

The net emission increase exceeded the PSD SER for VOC. Therefore, PSD review was triggered for this pollutant.

BACT Analysis Summary

Any major source or major modification subject to PSD review must conduct an analysis to ensure the use of best available control technology (BACT). The requirements for conducting BACT can be found in the PSD regulations and applies to each pollutant that exceeds the SER. A BACT analysis is required for each new or existing emission unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit. For this modification VOC exceeds its respective SER. The emission units and pollutants that require BACT are listed below.

Emission Unit	Source Description	Pollutants Subject to BACT
SN-38	Woodyard	VOC
	NCG System	VOC

The methodology used to determine BACT is the top-down method described in a 1987 memorandum from the EPA Assistant Administrator for Air and Radiation. Following the top-down method all available control technologies are ranked in descending order of control effectiveness. The most stringent control available for a similar or identical source or source category is identified, and a determination of feasibility is made. If the

most stringent level of control is determined to be infeasible based on technical, economic, environmental, or energy related reasons, then the next most stringent option is evaluated. The process continues until the BACT level under consideration cannot be eliminated. If the emission unit and pollutant is subject to an applicable State Implementation Plan emission limitation, New Source Performance Standard (40 CFR Part 60) or a National Emission Standard for Hazardous Pollutants (40 CFR Part 61) then BACT can be no less stringent than the emission standards specified by those applicable regulations. The *New Source Review Workshop Manual (Draft)* lists the five basic steps of conducting this analysis.

BACT Evaluation for the Woodyard

Step 1. Identify All Control Technologies. - The following technologies were considered for the Woodyard (SN-38):

Pollutant	Control Technology
VOC	Thermal Destruction (Incineration) Carbon Adsorption Condensation Biofiltration

Step 2. Eliminate Technically Infeasible Control Technologies - The second step is to determine which control technologies are infeasible for technical reasons. Each control technologies for each pollutant is considered, those that are clearly technically infeasible are eliminated.

Each of the control technologies list in Step 1 is technically infeasible. They are technically infeasible because the woodyard is the logical collection of the bark and woodchip piles and the associated handling equipment that covers approximately 12 acres. An enclosure of at least that size would be required to capture and route the emissions to the identified control technology.

Step 3. Rank Remaining Control Technologies – The third step is to rank the remaining control technologies based on effectiveness.

For the woodyard since the control technologies were technically infeasible ranking based on effectiveness was not necessary.

Step 4. Top Down Evaluation of Control Options - The fourth step is to evaluate the remaining control technologies based on economic, energy, and environmental considerations.

For the woodyard the only remaining option is "No Controls." Therefore it was not necessary to consider economic, energy, and environmental impacts in order justify why a control technology with a higher level of control was not selected.

Step 5. Select BACT – The most effective control option not eliminated is BACT. Based on available information in the RACT/BACT/LAER Clearinghouse, publications from EPA's Clean Air, Technology Center, and BACT determinations for VOC from woodyards, BACT limits were determined to be:

Source	Pollutant	BACT Determination		
		Control Technology	Emission Limitation or Alternative	Testing Frequency
Woodyard	VOC	No Controls	Shall not exceed 4,320,000 tons, wet basis, (2,160,000 tons dry basis) of wood processed per consecutive twelve month period.	None. In lieu of testing the facility will maintain monthly records demonstrating compliance with the operational standard.

An operational standard as opposed to an emission limitation was selected due to the fact that there are technological feasibilities and economical limitations to testing the woodyard for VOC. The facility, in order to test, would have to construct an enclosure that encompasses a foot print of approximately 12 acres just to be able to capture emissions which are otherwise fugitive.

BACT Evaluation for the Non Condensable Gas (NCG) System

Step 1. Identify All Control Technologies. - The following technologies were considered for the NCG:

Pollutant	Control Technology
VOC	Thermal Destruction (Incineration) Carbon Adsorption Condensation Biofiltration

Step 2. Eliminate Technically Infeasible Control Technologies - The second step is to determine which control technologies are infeasible for technical reasons. Each control technologies for each pollutant is considered, those that are clearly technically infeasible are eliminated.

The technical feasibility of some of the VOC control options is questionable. Most notably is catalytic oxidation (a subset of thermal destruction/incineration. EPA reports have indicated limited use of this technology in pulping industry due to high sulfur content of pulp mill vent gases. The sulfur in the vent gases can blind or poison catalytic systems. Regardless, no control technology was eliminated because the top control option (thermal destruction/incineration) will be selected.

Step 3. Rank Remaining Control Technologies – The third step is to rank the remaining control technologies based on effectiveness.

Pollutant	Control Technology	Destruction Efficiency
VOC	Thermal Destruction (Incineration)	Greater than 98%
	Carbon Adsorption	95% to98%
	Condensation	90% to 95%
	Biofiltration	90%

Step 4. Top Down Evaluation of Control Options - The fourth step is to evaluate the remaining control technologies based on economic, energy, and environmental considerations.

The permittee selected the thermal destruction/incineration control option which results in the highest level of control. Therefore no evaluation based on economic, energy, and environmental consideration was necessary.

Step 5. Select BACT – The most effective control option not eliminated is BACT. Based on available information in the RACT/BACT/LAER Clearinghouse, publications from EPA's Clean Air, Technology Center, and BACT determinations for VOC from NCG systems, BACT limits were determined to be:

Source	Pollutant	BACT Determination		
		Control Technology	Emission Limitation or Alternative	Testing Frequency
NCG	VOC	Thermal Destruction via boiler or lime kiln	98 % or Greater	None

The permittee has asserted that MACT (40 CFR Part 63, Subpart S) is BACT and that the necessary control equipment is already employed. The control equipment is the NCG system and the No. 2 Power Boiler (SN-05) or the No. 2 Lime Kiln (SN-09). The NCG system will collect the low volume, high concentration (LVHC) gases from this project and route the gases for destruction in either SN-05 or SN-09. Subpart S provides an option for achieving 98% destruction by introducing LVHC gases along with the primary fuel or directly into the flame zone of a boiler or lime kiln. The background information document for Subpart S (*EPA-453/R92-050b*) on Pages 5-2 and 8-19 clearly indicate the use of either boiler or the lime kiln is sufficient to ensure 98% reduction and without the need for emission monitoring. A mass emission limitation or monitoring that portion of mass emissions from either of these devices is impractical since both the boiler and kiln generate VOC's from the combustion of the primary fuel. Thus it is concluded testing to demonstrate the destruction efficiency for BACT is impractical as well. It should be noted that BACT is already met with the existing equipment.

Air Quality Analysis

PSD regulations requires the applicant to conduct an air quality analysis for the modification in order to demonstrate that the emissions from the modification along with other applicable increases and decreases will not cause or contribute to the violation of any NAAQS or PSD increment. For this modification PSD review was only triggered for VOC. There is no NAAQS or PSD increment for VOC. However, VOC is a precursor for the formation of ozone. For ozone there is a NAAQS but currently no increment. Additionally there is no approved model for ozone for single source applications. Therefore, no air dispersion modeling can be conducted that will allow a direct estimate offsite impacts due to this project. In lieu of conducting dispersion modeling, the permittee evaluated the VOC contributions of the facility and that of the surrounding areas. Based on this analysis, the project contributes to less than 1% of the total VOC emissions. The VOC contribution was then compared to the ozone concentration determined by the closest known monitors located in Harrison County, TX and Mena, AR. These monitors have 8-hour averages of 0.074 ppm and 0.072 ppm, respectively. Based on this comparison the permittee concluded that with a VOC contribution of less than 1% this modification would not cause or contribute to a NAAQS violation for ozone.

Class II Area Additional Impacts Analysis

An additional impact analysis is based existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the project's area of impact. The additional impact analysis consists of three parts: (1) growth, (2) soils and vegetation, and (3) visibility impairment.

Growth Analysis

The growth analysis includes a projection of the associated industrial, commercial, and residential source growth that result in the area due to the source and an estimate of the air emissions generated by the above associated industrial, commercial, and residential growth. The project is not expected to create any new fulltime positions. Residential growth is not expected to result from the project. In addition, the shipping of raw materials and products to and from the facility is not expected to significantly increase the level of rail or ground traffic in the area. Therefore, no appreciable increase in emissions is expected as a result of any industrial, commercial, or residential growth associated with the project.

Soils and Vegetation

The analysis of soil and vegetation air pollution impacts is based on an inventory of the soil and vegetation types found in the impact area. This inventory considers vegetation with commercial or recreational value. Since the air quality demonstration above

indicated the project will not cause or contribute to a NAAQS violation it is concluded that there will be no appreciable impact on soils and vegetation.

Class II Area Visibility

Visibility in general is evaluated using a three tiered approach involving software called-VISCREEN. This software considers impacts from NO_2 and particulate matter. Neither pollutant is emitted above already permitted rates, and as such, no additional impact on visibility is expected from this project. VISCREEN does not consider impacts from ozone. Therefore, no VISCREEN analysis was performed because there are no applicable emission increase requiring this analysis.

Class I Area Impact Analysis

Class I areas are areas of special national or regional natural, scenic, recreational, or historic value for which the PSD regulations provide special protection. The nearest Class I areas are the Caney Creek Wilderness Area located in southwestern Arkansas and the Upper Buffalo Wilderness Area located in northwestern Arkansas. Caney Creek is approximately 81 km north of the facility, and Upper Buffalo is approximately 249 km north of the facility. The modification must demonstrate that neither a visibility impairment or a violation of a Class I increment will occur from this project. Currently, there is no Class I increment for VOC or ozone.

For the same reasons for the Class II Areas, a Class I area visibility analysis using VISCREEN was not performed. Additionally, the federal land managers' guidance FLAG allows screening to determine whether or not visibility analysis must be performed. FLAG requires this assessment to consider both the mass emissions (Q) and a facility's proximity (d) to a Class I area. If the analysis results in Q/d value less than 10 then no further screening is necessary and it can be presumed that the project does not result in an appreciable impact on visibility in the Class I area. For this project, the increase, Q, is 5.6 tpy (all of which is PM_{10}). Thus Q/d is less than 0.1 and much less than 10 for the closer of the two Class I areas. Therefore, it is concluded additional visibility screening is not necessary for either Class I areas identified above.

7. COMPLIANCE STATUS:

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

The facility was last inspected on November 16th 2010 and determined to be operating in accordance with Permit No. 287-AOP-R8.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y

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, explain why this permit modification is not PSD?

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source No.	Regulation	Description
Facility	40 CFR Part 63, Subpart S	NESHAPS for Hazardous Air Pollutants from the Pulp and Paper Industry
Facility	40 CFR Part 60, Subpart A	General Provisions
01	40 CFR Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
01	40 CFR 52, Subpart E	Prevention of Significant Deterioration
02	40 CFR Part 60, Subpart BB	Standards of performance for Kraft Pulp Mills
02	40 CFR Part 63, Subpart MM	NESHAPS for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills
02	40 CFR 52, Subpart E	Prevention of Significant Deterioration
05	40 CFR Part 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
05	40 CFR Part 60, Subpart D	Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced after August 17, 1971
06	40 CFR Part 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
06	40 CFR 52, Subpart E	Prevention of Significant Deterioration
06	40 CFR Part 63, Subpart MM	NESHAPS for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills
08	40 CFR Part 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
08	40 CFR §52.21	Prevention of Significant Deterioration
08	40 CFR Part 63, Subpart MM	NESHAPS for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills
09	40 CFR Part 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
09	40 CFR Part 63, Subpart MM	NESHAPS for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills
12	40 CFR Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
14	40 CFR Part 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
14	40 CFR 52, Subpart E	Prevention of Significant Deterioration

Source No.	Regulation	Description
14	40 CFR Part 63, Subpart M	NESHAPS for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills
15	40 CFR Part 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
38, 15	40 CFR 52, Subpart E	Prevention of Significant Deterioration

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time for SO_2, CO, NO_X, and Lead (Pb). Model results for those pollutants have been repeated from review Permit 287-AOP-R9. Modeling for PM_{10} was conducted due to a permitted increase in that pollutant.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Highest Concentration ($\mu g/m^3$)	% of NAAQS
PM_{10}	472.9	150	24-Hour	125.4 [A]	81.6
SO_2	3,088.6	80	Annual	18.7	23.4
		1300	3-Hour	363.7	28.0
		365	24-Hour	142.9	39.2
CO	3,000.8	10,000	8-Hour	216	2.2
		40,000	1-Hour	664	1.7
NO_x	1,906.2	100	Annual	67.1	67.1
Pb	0.17	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.014	7.3

* Includes Little Rock 2009 background concentration of 38 $\mu g/m^3$

Non-Criteria Pollutants:

There was no increase in the non-criteria pollutant as such modeling was not performed. The results listed below are carried over from Permit No. 287-AOP-R9.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), 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?
1,1,1-Trichloroethane	1909	209.9	0.08	Yes
1,1,2,2-Tetrachloroethane	6.9	0.76	0.23	Yes
1,1-Dichloroethane	404.8	44.52	0.29	Yes
1,1-Dichloroethene	19.8	2.18	0.02	Yes
1,2-Dichloroethane	40.5	4.45	0.05	Yes
1,2-Dichloropropane	46.2	5.08	0.02	Yes
1,3-Butadiene	4.424	0.4866	0.000161	Yes
Acetone	1187.1	130.5	16.87	Yes
Acrylonitrile	4.3	0.48	0.41	Yes
Carbon Disulfide	3.1	0.34	0.05	Yes
Carbon Tetrachloride	31.46	3.46	0.001	Yes
Carbonyl Sulfide	245.6	27.02	0.04	Yes
Chlorobenzene	46.03	5.06	0.03	Yes
Chloroethane	263.8	29.02	0.10	Yes
Chromium	0.5	0.055	0.0499	Yes
Dichlorobenzene	60.1	6.61	0.0402	Yes
Dichloromethane	173.7	19.1	1.45	Yes
Ethylbenzene	434.2	47.76	0.6001	Yes
Ethylene Dibromide	0.3	0.033	0.0002	Yes
Hexane	176.2	19.38	5.74	Yes
Methyl Isobutyl Ketone	81.9	9.01	0.23	Yes
Naphthalene	52.4	5.76	1.01	Yes
PAH	35	3.85	0.0008	Yes
Perchloroethylene	169.5	18.6	0.75	Yes
Phenol	19.2	2.11	0.0297	Yes
Styrene	85.2	9.37	0.22	Yes
Toluene	75.4	8.28	4.86	Yes
Trichloroethylene	53.7	5.91	0.45	Yes
Xylene	434.2	47.76	1.56	Yes
Acetaldehyde	45	4.95	11.78	No
Acrolein	0.23	0.03	0.46	No
Ammonia	17.4	1.91	128.2	No
Antimony	0.5	0.055	0.0607	No
Arsenic	0.01	0.0011	0.0309	No
Benzene	1.6	0.18	9.49	No
Beryllium	0.00005	0.0000055	0.0062	No

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Cadmium	0.002	0.00022	0.078	No
Chlorine	1.45	0.1595	6.30	No
Chlorine Dioxide	0.2759	0.0303	3.00	No
Chloroform	48.8	5.37	17.084	No
Chromium VI	0.01	0.0011	0.0117	No
Cobalt	0.02	0.0022	0.0714	No
Formaldehyde	0.37	0.04	8.02	No
HCl	3	0.33	51.20	No
Lead	0.05	0.0055	0.1743	No
Manganese	0.2	0.022	4.91	No
Mercury	0.01	0.0011	0.0095	No
Methanol	262.1	28.82	507.1	No
Nickel	0.1	0.01	0.6012	No
Selenium	0.2	0.02	0.0678638	No
Sulfuric Acid	0.2	0.02	4.20	No
TRS	1.39	0.153	47.34	No
Vinyl Chloride	2.6	0.28	0.56	No

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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Acetaldehyde	450	8.3	Yes
Acrolein	2.3	0.27	Yes
Ammonia	174	122.7	Yes
Antimony	5	0.00283	Yes
Arsenic	0.1	1.18E-03	Yes
Benzene	16	0.81	Yes
Beryllium	5.00E-04	2.40E-04	Yes
Cadmium	0.02	4.17E-03	Yes
Chlorine	14.50102249	1.89	Yes
Chlorine Dioxide	2.759	1.53	Yes
Chloroform	488	10.4	Yes
Chromium VI	0.1	3.60E-04	Yes
Cobalt	0.2	3.24E-03	Yes
Formaldehyde	3.7	1.2	Yes
HCl	29.8	4.9578	Yes
Lead	0.5	0.011	Yes
Manganese	2	0.5142	Yes
Mercury	0.1	1.36E-03	Yes
Methanol	2621	776	Yes
Nickel	1.0	0.024	Yes
Selenium	2.0	2.71E-03	Yes

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Sulfuric Acid	2.0	0.065	Yes
TRS[A]	13.9	10.59	Yes
Vinyl Chloride	25.6	2.4	Yes

[A] Modeled as H_2S

Other Modeling:

Odor:

Odor modeling for sources emitting styrene.

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

H_2S 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 H_2S Standards Y
If exempt, explain:

The facility is subject to and complies with 40 CFR Part 60, Subpart BB and is exempt pursuant to §8-3-103-(d)(2)(B)(ii).

12. CALCULATIONS:

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Source SN-01 No. 3 Power Boiler					
PM/PM_{10}	NSPS and PSD	0.025 lb/MMBtu	ESP	98	Controlled Lb/hr based on 790 MMBtu/hr
SO_2	PSD BACT	0.1 lb/MMBtu (NSPS Limit)	N/A	-	PSD limit applied to unit with 620 MMBtu/hr of bark feed and 170 MMBtu/hr natural gas. (Permit 946-A)

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
VOC	PSD BACT	0.027 lb/MMBtu	N/A		PSD limit applied to unit with 790 MMBtu/hr of bark feed and natural gas at a steam production rate of 450,000 lb/hr. (Permit 946-A)
CO	PSD BACT	0.35 lb/MMBtu	N/A		PSD limit applied to unit with 790 MMBtu/hr of a combination of bark feed and natural gas at a steam production rate of 450,000 lb/hr. (Permit 946-A)
NO_X	PSD and NSPS Db	0.3 lb/MMBtu	N/A		PSD limit applied to unit with 790 MMBtu/hr of a combination of bark feed and natural gas at a steam production rate of 450,000 lb/hr. (Permit 946-A)
Lead	NCASI[1]	5.04E-06 lb/MMBtu	ESP	N/A	790 MMBtu/hr Heat Input Design Capacity
Acetaldehyde	Stack Test	0.21 lb/hr	N/A		
Acrolein	NCASI[2]	9.36E-05 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Benzene	NCASI[2]	3.30E-03 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Formaldehyde	NCASI[2]	1.56E-03 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Hydrogen Chloride	NCASI[2]	8.04E-04 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Hexane	NCASI[5]	1.8 lb/MMscf	N/A		790 MMBtu/hr Heat Input Design Capacity
Naphthalene	Stack Test	0.50 lb/hr	N/A		
Phenol	NCASI[2]	1.4E-05 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Toluene	NCASI[2]	3.48E-05 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity, No SF

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Antimony	NCASI[2]	5.04E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Arsenic	NCASI[2]	4.80E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Beryllium	NCASI[2]	4.80E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Cadmium	NCASI[2]	7.08E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Chromium VI	NCASI[2]	5.88E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Chromium	NCASI[2]	6.24E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Cobalt	NCASI[2]	2.28E-07 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Manganese	NCASI[2]	6.84E-05 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Mercury	Stack Test	1.92E-3 lb/hr	N/A		
Nickel	NCASI[2]	4.20E-06 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
Selenium	NCASI[2]	3.96E-06 lb/MMBtu	N/A		790 MMBtu/hr Heat Input Design Capacity
SN-02 No. 3 Lime Kiln					
PM_{10}/PM	NSPS BB	0.066 gr/dscf	ESP	98	Stack Test 8.6 lb PM_{10}/hr
SO_2	PSD	0.727 lb/Ton CaO (13.3 lb/hr)			PSD limit applied to unit with 440 tons per day of lime (Permit 946-A) (0.727*440)/24= lb/hr tpy *8760
VOC	PSD	0.795 lb/ton of CaO			287-AR-7 cites AP-42, 4th Edition, current AP-42 does not have a factor. Calculation of lb/h and tpy same as SO2. The permit has as PSD limit but 946-A did not have in PSD. Picked up as a PSD cite in 287-AR-7.

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
CO	PSD	3.0 lb/ton CaO			PSD limit applied to unit with 440 tons per day of lime (Permit 946-A) (3.0*440)/24= lb/hr tpy *8760
NO_X	PSD	3.63 lb/ton CaO			PSD limit applied to unit with 440 tons per day of lime (Permit 946-A) (3.63*440)/24= lb/hr tpy *8760
TRS	NSPS BB	8 ppm			1.34 lb/hr CEMS
Acetaldehyde	NCASI[3]	5.1E-03 lb/ton CaO			
Benzene	Stack Test	0.24 lb/hr			
Formaldehyde	NCASI[3]	6.12E-03 lb/ton CaO			
Methanol	Stack Test	1.31 lb/hr			
Toluene	NCASI[5]	9.96E-03 lb/ton CaO			
Source SN-03 No. 1 Power Boiler					
PM_{10}/PM	Stack Test	340.6lb/hr	WESP	98%	Stack test 20% SF
SO_2	Fuel Reporting	214 lb/hr			
VOC	Stack Test	43 lb/hr			
CO	Stack Test	164 lb/hr			Stack test 20% SF
NOx	Stack Test	247.5 lb/hr			
Lead	Stack Test	0.059 lb/hr	WESP		
Acetaldehyde	NCASI Factor	0.84 lb/hr	N/A		
Acrolein	NCASI[2]	9.36E-05 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Benzene	NCASI[2]	3.30E-03 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Formaldehyde	NCASI[2]	1.56E-03 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Hydrogen Chloride	Stack Test	52.2 lb/hr			
Hexane	NCASI[5]	1.8 lb/MMscf	N/A		580 MMBtu/hr Design Heat Input Capacity
Phenol	NCASI[2]	1.4E-05 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Toluene	NCASI[2]	3.48E-05 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Antimony	NCASI[2]	5.04E-07 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Arsenic	Stack Test	9.28E-03 lb/hr	N/A		
Beryllium	Stack Test	2.02E-03 lb/hr	N/A		
Cadmium	Stack Test	0.0746 lb/hr	N/A		
Chromium VI	NCASI[2]	5.88E-07 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Chromium	NCASI[2]	0.0242 lb/hr	N/A		580 MMBtu/hr Design Heat Input Capacity
Cobalt	NCASI[2]	2.28E-07 lb/MMBtu	N/A		580 MMBtu/hr Design Heat Input Capacity
Manganese	Stack Test	4.76 lb/hr	N/A		
Mercury	NCASI[2]	7.44E-07 lb/MMBtu			580 MMBtu/hr Design Heat Input Capacity
Nickel	Stack Test	0.0204			
Selenium	NCASI[2]	3.96E-06 lb/MMBtu			580 MMBtu/hr Design Heat Input Capacity
Source SN-05 No. 2 Power Boiler					
PM_{10}	BART	0.1 lb/MMBtu	Venturi Scrubber	98	820 MMBtu/hr Design Heat Input Capacity
SO_2	BART	1.2 lb/MMBtu	Venturi Scrubber	98	820 MMBtu/hr Design Heat Input Capacity
VOC	Stack Test	92 lb/hr			
CO	AP-42	0.324 lb/MMBtu			820 MMBtu/hr Design Heat Input Capacity
NO_X	NSPS	0.7 lb/MMBtu			820 MMBtu/hr Design Heat Input Capacity

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Lead	EPA Toxic Air Pollutant Factors, October 1988	0.03 lb/hr			
Acetaldehyde	Stack Test	0.21 lb/hr	N/A		
Acrolein	NCASI[2]	7.8E-05 lb/MMBtu	N/A		820 MMBtu/hr Design Heat Input Capacity
Benzene	NCASI[2]	3.3E-03 lb/MMBtu	N/A		820 MMBtu/hr Design Heat Input Capacity
HCl	Stack Test	5.75 lb/hr	N/A		
Hexane	NCASI[5]	1.8 lb/MMscf	N/A		820 MMBtu/hr Design Heat Input Capacity
Naphthalene	Stack Test	0.50 lb/hr	N/A		
Phenol	NCASI[2]	1.4E-05 lb/MMBtu	N/A		
Toluene	NCASI[2]	2.9E-05 lb/MMBtu	N/A		
Antimony	NCASI[1]	1.8E-05 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Arsenic	NCASI[1]	4.1E-04 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Beryllium	NCASI[1]	2.1E-05 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Cadmium	NCASI[1]	5.1E-05 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Chromium VI	NCASI[1]	6.1E-6 lb/MMBtu	Venturi Scrubber	98	820 MMBtu/hr Design Heat Input Capacity
Chromium	NCASI[1]	2.6E-04 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Cobalt	NCASI[1]	1.0E-04 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Manganese	NCASI[1]	4.0E-05 lb/MMBtu	Venturi Scrubber	98	820 MMBtu/hr Design Heat Input Capacity
Mercury	NCASI[1]	8.3E-05 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Nickel	NCASI[1]	2.8E-04 lb/ton coal	Venturi Scrubber	98	800 tons coal/day

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Selenium	NCASI[1]	1.3E-03 lb/ton coal	Venturi Scrubber	98	800 tons coal/day
Source SN-06 No. 2 Recovery Boiler					
PM_{10}	Stack Test	84.4	ESP	98	
SO_2	PSD	286 lb/hr			PSD limit from 287-AR-3
VOC	Stack Test	46.7 lb/hr			
CO	PSD	980 lb/hr 16.8 lb/ADTP			
NO_X	PSD	309.2 lb/hr 5.3 lb/ADTP			
Acetaldehyde	NCASI[6]	4.2E-04 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
Benzene	NCASI[6]	6.4E-04 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
Formaldehyde	Stack Test	0.72 lb/hr			
Hydrogen Chloride	Stack Test	51.20 lb/hr			
Methanol	NCASI[6]	0.045 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
Styrene	Stack Test	3.22 lb/hr			
Sulfuric Acid	NCASI[6]	3.024 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
TRS	CEMS	7.4 lb/hr			NSPS BB 5PPMV
Source SN-08 - No. 2 Smelt Dissolving Tank					
PM_{10}/ PM	NSPS BB	0.2 lb/ton BLS	Scrubber	80	PM is a PSD limit from 287-AR-3 2160 tons BLS/day 788,400 tons BLS/yr
SO_2	PSD	10.6 lb/hr	Scrubber	80	SO_2 is a PSD limit from 287-AR-3
VOC	NCASI[7]	0.066 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
Acetaldehyde	NCASI[7]	1.6E-03 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Ammonia	NCASI[7]	0.41E-03 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
Formaldehyde	NCASI[8]	3.5E-03 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
Methanol	NCASI[7]	0.023 lb/ton BLS			2160 tons BLS/day 788,400 tons BLS/yr
TRS	NSPS BB	0.033 lb/ton BLS	Scrubber	60	2160 tons BLS/day 788,400 tons BLS/yr
Source SN-09 No. 2 Lime Kiln					
PM/PM_{10}	Stack Test NSPS	51.0 lb/hr 0.064 gr/dscf	Scrubber	85	PM is a PSD limit
SO_2	Permit 946A	0.727 lb/ton CaO			Based on BACT for Lime Kiln No. 3 18.33 tons CaO/hr 160571 tons CaO/yr
VOC	AP-42 , 4th edition, 1985	0.9353 lb/ton CaO			18.33 tons CaO/hr 160571 tons CaO/yr
CO	AP-42 , 4th edition, 1985	3.0 lb/ton CaO			Based on BACT for Lime Kiln No. 3
NO_X	AP-42 , 4th edition, 1985	3.7411 lb/ton CaO			18.33 tons CaO/hr 160571 tons CaO/yr
Acetaldehyde	NCASI[3]	5.1E-03 lb/ton CaO			18.33 tons CaO/hr 160571 tons CaO/yr
Benzene	Stack Test	0.23			
Methanol	Stack Test	1.18			
Formaldehyde	NCASI[3]	8.5E-03 lb/ton CaO			
Toluene	NCASI[4]	8.3E-03 lb/ton CaO			
TRS	NSPS BB	8.00 ppmvd @10% O_2	Scrubber	25	CEMS

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Source SN-14 No. 3 Recovery Boiler					
PM_{10}/PM	PSD NSPS	93.5 lb/hr 0.044 gr/dscf	ESP	98	controlled
SO_2	PSD	425.0 lb/hr 250 PPM			287-AR had a PSD avoidance limit of the firing rate of BLS. CEMS can show compliance now. 1861.5 tpy
VOC	AP-42 , 4th edition, 1985	0.8 lb/ADTP			INCOMPLETE Calculations
CO	CEMS	856 lb/hr			
NOx	CEMS	270 lb/hr			PSD Limit
Acetaldehyde	NCASI[6]	4.2E-04 lb/ton BLS			2,800 tons/day 1,022,000 tons/yr
Benzene	NCASI[6]	6.4E-04 lb/ton BLS			2,800 tons/day 1,022,000 tons/yr
Formaldehyde	NCASI[6]	6.6E-03 lb/ton BLS			2,800 tons/day 1,022,000 tons/yr
Hydrogen Chloride	Stack Test	54.50 lb/hr			
Methanol	NCASI[6]	0.045 lb/ton BLS			2,800 tons/day 1,022,000 tons/yr
Styrene	NCASI[9]	8.8E-04 lb/ton BLS			2,800 tons/day 1,022,000 tons/yr
Sulfuric Acid	Stack Test	4.20 lb/hr			
TRS	CEMS	6.6 lb/hr			PSD Limit
Source SN-15 - No. 3 Smelt Dissolving Tank					
PM_{10}/PM	PSD NSPS BB	18.7 lb/hr 0.1 g/kg BLS	Scrubber	90	
SO_2	PSD		Scrubber	10	
VOC	NCASI[7]	0.066 lb/ton BLS			2800 tons/day 1,022,000 tons/year
TRS	PSD NSPS BB	1.6 lb/hr 0.0168 g/kg BLS	Scrubber	25	

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Acetaldehyde	NCASI[7]	1.6E-04 lb/ton BLS			
Ammonia	NCASI[7]	0.41 lb/ton BLS			
Formaldehyde	Stack Test	0.58 lb/hr			
Methanol	NCASI[7]	0.023 lb/ton BLS			
Sources SN-16 – No. 1A Bleachplant Vents, SN-17 - No. 1B Bleachplant Vents and SN-18 - No. 2 Bleachplant Vents					
VOC	Stack Test	32.0 lb/hr			Bubbled Sources
CO	Stack Test	240.4 lb/hr			
Acetaldehyde	NCASI[10]	2.3E-3 lb/ADTUBP			3,407 ADTUBP/day 1,234,555 ADTUBP/yr
Chlorine	Stack Test	6.00 lb/hr	Scrubber	99	
Chlorine Dioxide	Stack Test	4.00 lb/hr	Scrubber	99	
Chloroform	Stack Test	16.50 lb/hr			
Formaldehyde	NCASI[10]	4.2E-4 lb/ADTUBP			3,407 ADTUBP/day 1,234,555 ADTUBP/yr
HCl	NCASI[10]	0.022 lb/ADTUBP			3,407 ADTUBP/day 1,234,555 ADTUBP/yr
Methanol	NCASI[10]	0.15 lb/ADTUBP			3,407 ADTUBP/day 1,234,555 ADTUBP/yr
TRS	NCASI[10]	2.8E-3 lb/ADTUBP			3,407 ADTUBP/day 1,234,555 ADTUBP/yr
Source SN-20 - ERCO ClO2 Generator					
Chlorine	Stack Test	0.30 lb/hr			
Chlorine Dioxide	Stack Test	3.00 lb/hr			
Source SN-21 - Effluent Treatment Lagoons					
VOC	NCASI	248.9 lb/hr			Sum of methanol, formaldehyde, and chloroform estimates 75 Mgal/day effluent
Chloroform	NCASI[11]	5E-03 lb/ADTUBP			3,770 ADTUBP/day 1,376,050 ADTUBP/yr
Formaldehyde	NCASI[11]	0.76 ppmw			3,770 ADTUBP/day 1,376,050 ADTUBP/yr

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Methanol	NCASI[11]	4.9 [A] 21.4 [B] 0.25 [C] 0.25 [D]			3,770 ADTUBP/day 1,376,050 ADTUBP/yr Contributions from sources: A: Bleach Plant [lb/ADTUBP] B: Condensates [lb/ADTUBP] C: Clarifier Effluent [ppmw] D: Clarifier Fugitive [ppmw]
Source SN-22 - No. 1A and 1B Brownstock Washers					
VOC	stack test	1A 0.57 lb/ton pulp and No. 1B .06173 lb/ton pulp			59.2 lb/hr 259.3 tpy
Acetone	stack test	8.80 lb/hr			
Formaldehyde	stack test	1A 0.0109 lb/ton pulp			
Methanol	stack test	1A 0.01731 lb/ton pulp and No. 1B .0.01593 lb/ton pulp			
TRS	NCASI[12]	0.23 lb/ADTUBP			1,152 ADTUBP/day 420,480 ADTUBP/yr
Source SN-23 - Storage Tank - Methanol Tank					
VOC	AP-42 Sec. 7.1.3.1	39.81 lb/hr			
Methanol	AP-42 Sec. 7.1.3.1	39.81 lb/hr			
SN-28 - Storage Tank					
VOC	AP-42 Sec. 7.1.3.1	6.62 lb/hr			
Formic Acid	AP-42 Sec. 7.1.3.1	6.62 lb/hr			

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Source SN-29 - Recausticizer Vents					
PM/PM_{10}	NCASI[13]	0.031 lb/ton CaO			1,152 tons CaO/day 420,500 tons CaO/yr
VOC	NCASI Factor	3.62 lb/hr			Sum of acetaldehyde and methanol
Acetaldehyde	NCASI Factor	2.1E-2 lb/ton CaO			Emission factor is from the previous permit. Permittee requested to keep existing emission limit of 0.51 lb/hr.
Ammonia	NCASI[14]	0.46 lb/ton CaO			1,152 tons CaO/day 420,500 tons CaO/yr
Methanol	NCASI[14]	0.054 lb/ton CaO			1,152 tons CaO/day 420,500 tons CaO/yr
Sources SN-30A, SN-30B, SN-30C, SN-30D, SN-30E and SN-30E – PCC Carbonators Lime Silos					
PM_{10}	Stack test	4.8 lb/hr			
SO_2	Stack test	2.4 lb/hr			
VOC	Stack test	12.6 lb/hr			
CO	Stack test	54.6 lb/hr			
NO_X	Stack test	65.4 lb/hr			
TRS	Stack test	0.36 lb/hr			
Source SN-36 - Weak Black Liquor Tanks (Tanks #1 through #9)					
VOC	Stack test	7.3 lb/hr			
Methanol	Stack test	6.30 lb/hr			
TRS	Stack test	0.1 lb/hr			PSD limit
Source SN-36 – Weak Black Liquor Tank #10					
VOC	NCASI Factor	0.68 lb/hr/tank			
Methanol	NCASI Factor	0.62 lb/hr/tank			
TRS	NCASI Factor	0.84 lb/hr/tank			

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Source SN-37 - Pulp Dryer Hood and Vacuum Exhausts					
VOC	Stack test	4.7 lb/hr			R0 Application: production rate 37.5 tph finished pulp @7% moisture which is 34.875 tph bone dry pulp 900 air dried tons per day finished product Permitted 8,760 hours (328,500 ADTFP/yr)
Acetaldehyde	NCASI[15]	0.033 lb/ADTFP			See comment for VOC. Permit limit includes 20% safety factor
Methanol	NCASI[15]	0.071 lb/ADTFP			See comment for VOC. Permit limit includes 20% safety factor
Source SN-38 - No. 2 and No. 3 Wood Yards					
PM	AP-42 Section 13.2.4	6.67E-5 lb/ton bark 4.05E-5 lb/ton chips			
PM_{10}	AP-42 Section 13.2.4	3.15E-5 lb/ton bark 1.91E-5 lb/ton chips			
VOC	NCASI[16]	0.27 lb/Tdw Hardwood 2.12 lb/Tdw Softwood			Assumes 50% moisture, 74% softwood, and 26% hardwood PSD Limit
Source SN-39 – High Density Storage Tanks					
VOC	NCASI[14]	0.151 lb/hr/tank			11 tanks Sum of acetaldehyde, chloroform, and methanol 20% SF
Acetaldehyde	NCASI[14]	0.02 lb/hr/tank			11 tanks 20% SF

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Chloroform	NCASI[14]	0.011 lb/hr/tank			11 tanks 20% SF
Methanol	NCASI[14]	0.12 lb/hr/tank			11 tanks 20% SF
TRS	NCASI[14]	0.349 lb/hr/tank			11 tanks 20% SF
Acetone	NCASI[14]	0.027 lb/hr/tank			11 tanks 20% SF
Source SN-40 - No. 1A and No. 1B Digester Chip Fill Exhausts					
VOC	Stack Test	10.0 lb/hr			Compliance demonstrated by limiting time between blows Sum of Methanol and Ethanol 2,304 ADTP/day 840,960 ADTP/yr
Methanol	Stack Test	0.33 lb/ADTP			Compliance demonstrated by limiting time between blows
TRS	NCASI[17]	0.072 lb/ADTP			Compliance demonstrated by limiting time between blows 2,304 ADTP/day 840,960 ADTP/yr
Source SN-41 - Sludge Landfill					
PM	AP-42 Section 13.2.4	1.36E-3 lb/ton Sludge			344,000 yd^3/yr 170 yd^3/hr 947.7 lb/yd^3
PM_{10}	AP-42 Section 13.2.4	6.5E-4 lb/ton Sludge			344,000 yd^3/yr 170 yd^3/hr 947.7 lb/yd^3
VOC (as NMOC)	LandGEM	63.15 lb/hr			
CO	LandGEM	4.8 lb/hr 1.8 tpy			
HAPS	LandGEM				See Permit For Emission Rates

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Source SN-42 - No. 2 Decker					
VOC	Stack Test	5.6 lb/hr			Sum of acetaldehyde, formaldehyde, methanol, and terpenes (0.48 lb terpenes/ADTUBP)
Acetaldehyde	NCASI[18]	5.9E-03 lb/ADTUBP			1,100 ADTUBP/day 401,500 ADTUBP/yr 20% SF
Acetone	Stack Test	7.52 lb/hr			
Formaldehyde	NCASI[18]	3.3E-03 lb/ADTUBP			1,100 ADTUBP/day 401,500 ADTUBP/yr 20% SF
Methanol	Stack Test	3.3 lb/hr			
TRS	NCASI[18]	0.044 lb/ADTUBP			1,100 ADTUBP/day 401,500 ADTUBP/yr 20% SF
Source SN-43 - Tub Grinder					
PM_{10}/PM	AP-42 Table 3.3-1	0.31 lb/MMBtu			4 MMBtu/hr 258,000 gallon/yr 0.13 MMBtu/gal
SO_2	AP-42 Table 3.3-1	0.29 lb/MMBtu			4 MMBtu/hr 258,000 gallon/yr 0.13 MMBtu/gal
VOC	AP-42 Table 3.3-1	0.36 lb/MMBtu			4 MMBtu/hr 258,000 gallon/yr 0.13 MMBtu/gal
CO	AP-42 Table 3.3-1	0.95 lb/MMBtu			4 MMBtu/hr 258,000 gallon/yr 0.13 MMBtu/gal
NO_X	AP-42 Table 3.3-1	4.41 lb/MMBtu			4 MMBtu/hr 258,000 gallon/yr 0.13 MMBtu/gal
HAPs	AP-42 Table 3.3-2				4 MMBtu/hr 258,000 gallon/yr 0.13 MMBtu/gal
Sources SN-44a, SN-44b, SN-44c and SN-44d - Paper Machines					
VOC	Testing	44A: 2.0 44B: 4.7 44C: 5.6 44D: 6.8			Emission factors are in lb/hr by machine.

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
Acetaldehyde	NCASI[15]	0.033 lb/ADTFP			SN-44A 19.1 ADTFP/hr 167,316 ADTFP/yr SN-44B &C 30.77 ADTFP/hr 269,553 ADTFP/yr SN-44D 53.06 ADTFP/hr 464,755 ADTFP/yr ADTFP – air dried tons of finished product 20% SF
Acrolein	NCASI[15]	1.6E-3 lb/ADTFP			See Comments for Acetaldehyde 20% SF
Formaldehyde	NCASI[15]	6.4E-3 lb/ADTFP			See Comments for Acetaldehyde 20% SF
Methanol	Testing	44A: 2.00 44B: 4.70 44C: 5.60 44D: 6.80			Limited by VOC and Methanol in shower water Emission factors are in lb/hr by machine.
Source SN-45 - Oxygen Delignification System					
VOC	Stack Test	9.1 lb/hr			1,100 ADTUBP/day
CO	Stack Test	16.5 lb/hr			1,100 ADTUBP/day
Methanol	Stack Test	9.11 lb/hr			1,100 ADTUBP/day
SN-46 – Haul roads					
PM/PM_{10}	Estimate	0.16 lb/VMT		Subject to road maintenance plan	Overall lb/VMT for both paved/undpaved with controls included

Constituent	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lb/ton, lb/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
SN-Rental (Package Boiler)					
PM_{10}	AP-42 Tables 1.3-1 & 2 Table 1.4-2	3.3lb/ 1000gal 7.6 lb/ MMscf			238.1 MMBtu/hr Natural Gas 220.5 MMBtu/hr No 2. Fuel Oil
SO_2	AP-42 Table 1.3-1 Table 1.4-2	142 Slb/ 1000 gal 0.6 lb/ MMscf			
VOC	AP-42 Table 1.4-2 Table 1.3-3	5.5lb/ MMscf 0.252 lb/ 1000 gal			
CO	AP-42 Table 1.4-1 Table 1.3-1	84 lb/ MMscf 5lb/ 1000 gal			
NO_X	AP-42 Table 1.4-1 Table 1.3-1	140 lb/ MMscf 10 lb/ 1000 gal			
HAP	AP-42 Tables 1.3-9 1.3-10 1.4-3	See Application			

NCASI[1] 2008 NCASI Handbook – Wood Table 10.2.2-2
NCASI[2] 2008 NCASI Handbook – Natural Gas Table 10.2.2-1
NCASI[3] 2008 NCASI Handbook – Table 6.5.6-1
NCASI[4] Technical Bulletin 858, Table A-14
NCASI[5] 2008 NCASI Handbook – Natural Gas Table 10.2.1.1-1
NCASI[6] 2008 NCASI Handbook – Table 6.5.3.9-1
NCASI[7] 2008 NCASI Handbook – Table 6.5.4.3-1
NCASI[8] Technical Bulletin 858 Table A-15
NCASI[9] Technical Bulletin 858 Table A-12
NCASI[10] 2008 NCASI Handbook – Table 8.4.2.3-1
NCASI[11] March 2009 NCASI SARA Handbook Table #2, #3, #4, #5, #6
NCASI[12] 2008 NCASI Handbook – Table 5.3.1.2.1-1
NCASI[13] Technical Bulletin 884 Table 4.14
NCASI[14] Technical Bulletin 701 Table 7
NCASI[15] 2008 NCASI Handbook – Table 9.3.1.1-1

NCASI[16] Technical Bulletin 723 Table 4
NCASI[17] 2008 NCASI Handbook – Table 3.6.1.1.1-1
NCASI[18] 2008 NCASI Handbook – Table 5.3.1.3.1-1
NCASI[19] 2008 NCASI Handbook – Table 8.2.2.1-2

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN(s)	Pollutant	Test Method	Test Interval	Justification For Test Requirement
01	PM	5	Every 5 years	§19.702
01	PM_{10}	201A or 5	Every 5 years	§19.702
SN-01	VOC	Method 25A	Every 5 years	§19.702
SN-02	PM/PM_{10}	5 or 29	Initial test	§63.865
02	O_2	3, 3A or 3B	Initial test	§63.865
02	PM	5	Every five years	§18.1002
02	PM_{10}	201A or 5	Every five years	§19.702
02	VOC	25A	Every five years	§19.702
02	% Solids in Lime Mud		Once per day	§19.705
03	Sulfur Content of Fuel Oil	Manufacturer Certification or ASTM Sulfur content	Each Shipment	§19.705
03	VOC	25A	Every five years	§19.705
03	PM	5 and 202	Every five years	§18.1002
03	PM_{10}	201A or 5	Every five years	§19.705
03	CO	10B	Every five years	§19.705
03	NO_X	7E	Every five years	§19.705
05	PM	5	Every five years	§18.1002
05	PM_{10}	201A or 5	Every five years	§19.705
05	VOC	25A	Every five years	§19.705
05	HCl	26A	Every five years	§18.1002
06	VOC	25A	Every five years	§19.705
06	PM	5 and 202	Every five years	§19.705
06	PM_{10}	201A or 5	Every five years	§19.705
08	TRS	16	Every five years	§18.1002
08	VOC	25A	Every five years	§19.705
08	O_2	3A or 3B	Once	§63.865
08	PM	5	Every five years	§19.705
08	PM_{10}	201A or 5	Every five years	§19.705
09	PM	5 or 29	Once	§63.865

SN(s)	Pollutant	Test Method	Test Interval	Justification For Test Requirement
09	O_2	3A or 3B	Once	§63.865
09	NO_X	7E	Annually	§19.705
09	% solids in lime mud	Testing	Daily	N
14	VOC	25A	Every five years	Y
15	TRS	16	Annual	§19.804
15	Ammonia	206	Every five years	§19.703
15	PM	5 or 29	Initial	63.865
15	O_2	3 or 3A	Initial	63.865
16,17,18	Pressure differential	Pressure transmitter	Yearly	63.453(a)(1)
16,17,18	Cl_2, ClO_2	NCASI Special Report Number 91-07	Every five years	18.1002
16,17,18	CO	10B	Every five years	§19.703
16,17,18	VOC	25A	Every five years	§19.703
20	Cl_2, ClO_2	NCASI Special Report Number 91-07	Every five years	18.1002
21	COD	Water Test	Daily	63.453(j)
21	Horsepower of Aerator units	Observation	Daily	63.453(j)
21	Inlet liquid flow	Flow Meter	Daily	63.453(j)
21	Liquid Temperature	Thermocouple	Daily	63.453(j)
21	BOD_5 percent reduction	BOD_5	Quarterly	63.453(j)
22	Methanol	25D	Yearly	§18.1003
22	Acetone	25D	Yearly	§18.1003
30	PM	5	Every five years	§19.702
30	PM/PM_{10}	201A or 5	Every five years	§19.702
30	SO_2	6C	Every five years	§19.702
30	VOC	25A	Every five years	§19.702
30	NO_X	7E	Every five years	§19.702
37	VOC	25D	Yearly	§19.702

SN(s)	Pollutant	Test Method	Test Interval	Justification For Test Requirement
42	Methanol	NCASI Method DI/MEOH-94-02, Methanol in Process liquids by GC/FID, August 1998, Methods Manual, NCASI, Research Triangle Park, NC	Yearly	§18.1002
42	Acetone		Yearly	§18.1002
44a	VOC	25D on shower water	Yearly	§19.703
44b, 44c, 44d	Methanol	NCASI Method DI/MEOH-94-02, Methanol in Process liquids by GC/FID, August 1998, Methods Manual, NCASI, Research Triangle Park, NC	Yearly	§18.1002
45	VOC	25A	Every 5 years	§19.705
45	CO	10	Every 5 years	§19.705

14. MONITORING OR CEMS

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

SN(s)	Parameter or Pollutant to be Monitored	Method of Monitoring (CEM, Pressure Gauge, etc)	Frequency*	Report (Y/N)**
01	CO, NO_X	CEM	Every 15 minutes; Average once/ hour	N
01	Opacity	COM	Six-minute average	N
02	TRS	CEM	12-hour Average	N
02	CO, O_2	CEM	Every 15 minutes; Average once/ hour	N
02	Opacity	COM	Six-minute average	N
03	Pressure Drop across Multi-clones	CPMS	Once per 8-hr shift	N

SN(s)	Parameter or Pollutant to be Monitored	Method of Monitoring (CEM, Pressure Gauge, etc)	Frequency*	Report (Y/N)**
05	SO_2, CO, NO_X, O_2	CEM	Every 15 minutes; Average once/ hour	N
05	Temperature Scrubbing Liquid Flow rate Pressure Drop of Gas Stream	CEM	Continuous	N
06	SO_2, CO, NO_X TRS, O_2	CEM	Every 15 minutes; Average once/ hour	N
06	Opacity	COM	Six-minute average	N
06	Floor Tube Temperature	CPMS	Continuous	N
08	Pressure Drop of gas stream Pressure of liquid supply Scrubbing liquor flow rate	CPMS	Continuous	Y
09	CO, TRS, O_2	CEM	Every 15 minutes; Average once/ hour	N
09	Scrubbing liquid flow rate Air pressure drop across scrubber Temperature of lime kiln	CPMS	Continuous	N
14	Opacity	COM	Six-minute average	N
14	CO, NO_X, TRS, O_2	CEM	Every 15 minutes; Average once/ hour	N
14	SO_2	CEM	Every 15 minutes; Average once/ hour	Y
14	Temperature	CPMS	Continuous	N
15	Scrubber gas pressure drop Scrubber Liquid Pressure	CPMS	Continuous	Y

SN(s)	Parameter or Pollutant to be Monitored	Method of Monitoring (CEM, Pressure Gauge, etc)	Frequency*	Report (Y/N)**
15	Scrubbing liquid flow rate	CPMS	Every 8 hours – average the three daily readings	N
16	Inlet air flow rate Scrubbing liquid flow rate Inlet pH of Scrubber Liquid	CPMS	Continuous	N
17	Inlet air flow rate Scrubbing liquid flow rate Inlet pH of Scrubber Liquid	CPMS	Continuous	N
18	Inlet air flow rate Scrubbing liquid flow rate Inlet pH of Scrubber Liquid	CPMS	Continuous	N
20	Absorption Water Temperature	Thermocouple	Once per shift	N
36	Temperature	CPMS	Continuous	N

15. RECORDKEEPING REQUIREMENTS:

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

SN	Recorded Item	Limit	Frequency	Report (Y/N)
01	Fuel Usage	Recording of pounds of fuel used	Daily	N
01	Fuel Usage	Recording of pounds of fuel used	Monthly Average	Y
01	Fuel Usage	Recording of pounds of fuel used	12-month Rolling Average	Y
01	Hourly NO_X Emission Rate	237 lb/hr	Hourly	Y
01	30-day average NO_X emission rates	0.3 lb/MMBtu	30-day rolling average	Y
01	30-day average CO emission rates	0.35 lb/MMBtu	30-day rolling average	Y
01	BTU Loading	790 MMBTU/hr	Daily	Y
02	TRS Concentration		Twelve-hour Average	Y

SN	Recorded Item	Limit	Frequency	Report (Y/N)
02	O_2		Twelve-hour Average	N
02	Period pre-coat filter isolated	75% feed capacity for kiln		N
02	CO and NO_X	240.9 tpy CO 291.3 tpy NO_X	30-day rolling averages	N
02	%Solids of lime mud feed	65%	30-day rolling average	Daily
02	CaO Production	Ton/d	daily	Y
03	Fuel oil usage	2,700,000 gal/12 months	Monthly	Y
03	Pressure Drop across Multiclones	0.68 in. of H_2O	Every eight hours	N
05	Fuel Usage	tpd	daily	Y
05	Fuel Usage	tpd	Month	Y
06	TRS emission	12-hour average	Daily	N
06	O_2 Concentration	12-hour average	Daily	N
06	Hourly HCl Emissions	One-hour average	Hourly	N
06	Floor Tube Temperature	3-hour average	Hourly	Y
06	Floor Tube Temperature	monthly average	monthly	Y
06	Black Liquor Solids Rate	Daily feed	Daily	N
08	Pressure Drop of gas stream	Instantaneous	Once per shift	N
08	Pressure of liquid supply	Instantaneous	Once per shift	N
08	Scrubbing Liquor flow Rate	Flow Meter	Hourly	Y
08	Pressure Drop of gas stream	Pressure Drop	Once Every 15-minutes	Y
08	Scrubbing Liquor flow Rate	Flow Meter	Once Every 15-minutes	Y
09	TRS Concentration	CEMS	12-hour average	N
09	O_2 Concentration	CEMS	12-hour average	N
09	Pressure Drop of gas stream	Instantaneous	Once per shift	N
09	Pressure of liquid supply	Instantaneous	Once per shift	N
09	Temperature	1-hour Rolling average	hourly	N
09	Fuel Oil Usage	Yearly	12-month Rolling average	Y
09	% Solids in lime mud		Once per shift	Y
09	CaO Production Rate	daily	daily	
09	Liquid Flow rate	Daily		N
09	Gas pressure drop	CEMs	Daily	N
12	Fuel Usage		Daily	Y
12	Fuel Usage		Monthly	Y

SN	Recorded Item	Limit	Frequency	Report (Y/N)
12	Hours of Operation		Hour	Y
12	Steam Loading		Hourly	N
14	TRS concentration		12-hour average	N
14	Black Liquor Firing Rate		Time below 1.5 MMlbs/day	N
14	HCl emissions	54.5 lb/hr and 238.71 tpy	Hourly	Y
14	BLS firing rate		Daily	Y
15	Scrubber Gas Pressure drop		Once per shift/ once every 15 minutes	Y
15	Scrubber Liquid Supply Pressure		Once per shift	Y
15	Scrubber Liquid flow Rate	175 gpm	Once per shift/ once every 15 minutes	Y
16	Fan Amperage	65 -105 amperes	Once per shift	Y
16	Scrubber Liquid flow Rate	300 gallons/minute	Once per shift	
17	Scrubber Liquid flow Rate	300 gallons/minute	Once per shift	
17	Fan Amperage	50 -105 amperes	Once per shift	Y
18	Scrubber Liquid flow Rate	350 gallons/minute	Once per shift	
18	350 gallons/minute	30 -80 amperes	Once per shift	Y
20	Scrubber Water Temperature		Once per shift	N
23	Tank Dimensions			N
23	Methanol Throughput	18,850,000 lbs/12 months	Monthly	Y
24	Ammonia Throughput	800,000 lbs/12 months	Monthly	Y
25	Phosphoric Acid throughput	1,500,000 lbs/12 months	Monthly	Y
26	Sulfuric Acid throughput	105,120,000 lbs/12 months	Monthly	Y
28	Formic Acid throughput	5,336,000 lbs/12 months	Monthly	Y
29	Lime processed	420,500 tons/12 months	Monthly	Y
36 Tank #10	Weak Black Liquor Throughput	2,018,304,000 gallon/12 months	Monthly	Y
37	Finished Product (Pulp)	328,000 tons of air dried pulp	Monthly	Y
38	Woodchips processed	4,320,000 tons/12 months	Monthly	Y
40	Time sample port is opened	Only when retrieving sample	Daily	N
40	Spacing of digester blows	Minimum of 25 minutes	Daily	N
41	Sludge put in landfill	163,000 tons/12 months	Monthly	Y
42	Unbleached Pulp	401,500 tons of air dried unbleached pulp	Monthly	Y
43	Fuel Consumption	258,000 gallons/12 months	Monthly	Y

SN	Recorded Item	Limit	Frequency	Report (Y/N,
44A	Finished Product	167,316 tons air dried paper/12 months	Monthly	Y
44B	Finished Product	269,553 tons air dried paper/12 months	Monthly	Y
44C	Finished Product	269,553 tons air dried paper/12 months	Monthly	Y
44D	Finished Product	464,755 tons air dried paper/12 months	Monthly	Y
01,03,05	Tire derived fuel	220 tons/24-hours	Daily	Y
Rental	Fuel Consumption	5.76 MMgal No. 2fuel oil 490.3 MMscf Natuarl Gas	Daily	Y
ALL	Units Operating at less than 25% capacity		Yearly	Y

16. OPACITY:

SN	Opacity %	Justification	Compliance Mechanism
01	20	Boiler fired with many different fuels	COMS - submittals in accordance with CEM standards
02	20	This is a lime kiln. Particulate emissions are present which are not entirely caused by fuel combustion.	COMS - submittals in accordance with CEM standards
03	40	Power boiler that burns mostly fuel oil and bark.	Parametric monitoring of multi-clone pressure drop
	5	This is the limit when firing only natural gas.	No compliance mechanism needed when burning only natural gas.
05	20	This is a boiler which is fired with many different types of fuel.	Scrubber parameters - no submittal of records required.
06	20	Recovery boiler. The highest allowable under the NSPS is 35%. The boiler is limited to 20% because of Department regulations.	CEMS - submittals in accordance with CEM standards
08	20	Smelt tank with 18 lb/hr of particulate matter emissions.	Scrubber parameters - Submittal of records as required by 63 Subpart MM
09	20	This is a lime kiln which has particulate matter emissions from fuel combustion as well as from proper operation of the kiln.	Scrubber parameters - Submittal of records as required by 63 Subpart MM

SN	Opacity %	Justification	Compliance Mechanism
11	5	Natural gas fired boiler. Department study has shown that natural gas fired sources should not have any visible emissions when operated properly.	Natural gas as the only fuel used to fire this source.
12	5	Natural gas fired boiler. Department study has shown that natural gas fired sources should not have any visible emissions when operated properly.	Natural gas as the only fuel used to fire this source.
14	20	Recovery boiler. The highest allowable under the NSPS is 35%. The boiler is limited to 20% because of Department regulations.	COMS - submittals in accordance with CEM standards
15	20	Smelt tank with PM emissions of 18.7 lb/hr.	Scrubber parameters - Submittal of records as required by 63 Subpart MM
43	5	Tub grinder fired with diesel fuel.	Weekly observations - no submittal of records required
Rental	5	Department Guidance	Combust Natural Gas
Rental	20	Regulation §19.501	Weekly Observations

17. DELETED CONDITIONS:

No condition was removed as part of this permit revision.

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Diesel Fire Pumps (3)	A1	0.34	0.32	0.40	1.06	4.87	0.0013	0.0711
Emergency Generator 220 hp	A1	0.12	0.11	0.14	0.37	1.7	5E-04	0.0061
250 gal lubricating/hydraulic oil tanks (5,000 gal site wide)	A2			5E-05				
No 6. Fuel Oil Day Tank (10,000 gal)	A3			8E-05				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Woodyard Diesel Tank (9,425 gal)	A3			0.014				
Woodyard Hydraulic Oil Tank (9,425 gal)	A3			9E-05				
Medium Diesel Tanks (<10,000 gal site wide)	A3			0.014				
Small Diesel Tanks (<1,000 gal each)	A3			0.01				
Paper Machine Portable Tote Bins	A3			0.01				
Caustic Storage Tanks	A4							
Laboratory Hoods	A5							
Lime Kiln Backup Motors (#2 and #3)	A12	0.004	2E-04	0.04	0.11	1.43		
Two No.6 Fuel Oil Storage Tanks (130,000 gal)	A13			0.002				
Mill Services (storeroom) gasoline tank (130,000 gal)	A13			1.65				
Brock Services Gasoline Tank (552 gal)	A13			0.27				
Coal Pile	A13	0.03						
Turpentine Storage Tank (18,612 gal)	A13			0.546				

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0287-AOP-R9

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

_____

Phillip Murphy, P.E.
Engineering Supervisor, Air Division

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 12-15-10

Facility Name: Domtar A.W. LLC
Permit Number: 287-AOP-R10
AFIN: 41-00002

$/ton factor	22.07	Annual Chargeable Emissions (tpy)	16237.83
Permit Type	Modification	Permit Fee $	1000

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)	11.4
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	☑	2588.9	2600.3	11.4	11.4	2600.3
PM_{10}	☐	2023.5	2033	9.5		
SO_2	☑	8101	8101	0	0	4000
VOC	☑	4600.46	5825.16	1224.7	0	4000
CO	☐	12782.77	12782.77	0		
NO_X	☑	7878.9	7878.9	0	0	4000
Lead	☐	0.72739	0.72739	0		
1,1,1-Trichloroethane	☑	0.03	0.03	0	0	0.03
1,1,2,2-Tetrachloroethane	☐	0.08	0.08	0		
1,1-Dichloroethane	☐	0.11	0.11	0		
1,1-Dichloroethene	☐	0.00865	0.00865	0		
1,2-Dichloroethane	☐	0.02	0.02	0		
1,2-Dichloropropane	☐	0.00907	0.00907	0		
1,3-Butadiene	☐	0.000706	0.000706	0		
Acetaldehyde	☐	44.9139	44.9139	0		
Acrolein	☐	2.03167	2.03167	0		
Acrylonitrile	☐	0.15	0.15	0		
Ammonia	☑	561.41	561.41	0	0	561.41
Antimony	☐	0.161944	0.161944	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Arsenic	☐	0.116807	0.116807	0		
Benzene	☐	40.81742	40.81742	0		
Beryllium	☐	0.025546	0.025546	0		
Cadmium	☐	0.3634	0.3634	0		
Carbon Disulfide	☐	0.02	0.02	0		
Carbon Tetrachloride	☐	0.000275	0.000275	0		
Carbonyl Sulfide	☐	0.01	0.01	0		
Chlorine	☑	27.6	27.6	0	0	27.6
Chlorine Dioxide	☑	30.66	30.66	0	0	30.66
Chlorobenzene	☐	0.01	0.01	0		
Chloroethane	☐	0.04	0.04	0		
Chloroform	☐	74.8016	74.8016	0		
Chromium	☐	0.24231	0.24231	0		
Chromium VI	☐	0.046112	0.046112	0		
Cobalt	☐	0.186053	0.186053	0		
Dichlorobenzene	☐	0.01	0.01	0		
Dichloromethane	☐	0.53	0.53	0		
Ethylbenzene	☐	0.220183	0.220183	0		
Ethylene Dibromide	☐	0.000084	0.000084	0		
Formaldehyde	☐	34.9963	34.9963	0		
Formic Acid	☐	0.15	0.15	0		
HCl	☑	735.97	735.97	0	0	735.97
Hexane	☐	21.011	21.011	0		
Manganese	☐	21.53666	21.53666	0		
Mercury	☐	0.031203	0.031203	0		
Methanol	☐	1776.97	1776.97	0		
Methyl Isobutyl Ketone	☐	0.08	0.08	0		
Naphthalene	☐	4.38508	4.38508	0		
Nickel	☐	2.6579	2.6579	0		
PAH	☐	0.01253	0.01253	0		
Perchloroethylene	☑	0.27	0.27	0	0	0.27
Phenol	☐	0.16034	0.16034	0		
Selenium	☐	0.255684	0.255684	0		
Styrene	☐	0.96	0.96	0		
Sulfuric Acid	☐	18.4	31.65	13.25		
Toluene	☐	3.53529	3.53529	0		
Trichloroethylene	☐	0.16	0.16	0		
TRS	☑	207.75	207.75	0	0	207.75

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Vinyl Chloride	☐	0.2	0.2	0		
Xylene	☐	0.575464	0.575464	0		
Acetone	☑	73.84	73.84	0	0	73.84