State of Idaho
Department of Environmental Quality
Air Quality Division

AIR QUALITY PERMIT
STATEMENT OF BASIS

Tier II Operating Permit No. T2-2009.0005

Final

Ceda-Pine Veneer, Inc.

Samuels, Idaho

Facility ID No. 017-00036

September 11, 2009

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The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CAM	Compliance assurance monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
gr	grain (1 lb = 7,000 grains)
dscf	dry standard cubic feet
dscfm	dry standard cubic feet per minute
EF	emissions factor
EI	emissions inventory
EPA	U.S. Environmental Protection Agency
Gal/hr	gallons per hour
HAP	Hazardous Air Pollutant
hr	hour
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/day	pounds per day
lb/hr	pounds per hour
m	meter(s)
MACT	Maximum Achievable Control Technology
$\mu g/m^3$	micrograms per cubic meter
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PC	permit condition
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SO_2	sulfur dioxide
TAP	Toxic Air Pollutant
Tier II	Tier II operating permit
Tier II/PTC	Tier II operating permit and permit to construct
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. FACILITY INFORMATION

1.1 Facility Description

Ceda-Pine Veneer Inc. produces softwood veneer and green dimensional lumber. Logs are stored and debarked on site. The removed bark is used as fuel for the boiler. The logs are cut into cants and dimensional lumber. The cants from on site or off-site are heated in the steam chambers and further processed into veneer. The veneer is dried and stored on site. The dimensional lumber is sold as a rough green product.

1.2 Permitting Action and Facility Permitting History

This permitting action is for a renewal of the exiting Tier II operating permit (Tier II) and Permit to Construct (PTC). The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

September 5, 2003	T2-020122, typographical error corrections and minor language changes for consistency and clarity, permit status (S)
July 23, 2002	T2-010111, renewal of Tier II issued on August 5, 1996, permit status (S)
October 9, 1998	No. 017-00036, increase of log throughput from 12.6 million board feet of log to 25 million board feet of log, permit status (S)
August 5, 1996	No. 9504-041-2, establishing throughput limits for becoming a synthetic minor source, permit status (S)
May 8, 1989	No. 0240-0036, for the construct of the hog-fuel fired boiler, permit status (S)

2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

2.1 Application Scope

This permitting action is for a renewal of the exiting Tier II/PTC. The permitting action includes a facility-wide modeling analysis demonstrating that the facility is in compliance with national ambient air quality standards (NAAQS.)

In the renewal application, the facility has requested more stringent production limits than those in the existing Tier II/PTC in order to be in compliance with NAAQS. Consequently, the entire permit is issued in accordance with IDAPA 58.01.01.400; and all the PTC permit conditions are removed. Some existing permit conditions, including PTC conditions, are less stringent; and under those existing permit conditions, the facility cannot demonstrate compliance with NAAQS.

2.2 Application Chronology

January 13, 2009	DEQ received application
February 5, 2009	DEQ declared the application complete
April 2, 2009	DEQ granted Ceda-Pine 30 days to address NAAQS non-compliance issues in the application
April 21, 2009	DEQ received information ensuring compliance of NAAQS
July 24, 2009	DEQ issued the draft permit for applicant review
August 21, 2009	DEQ received comments on the draft permit
September 8, 2009	DEQ received additional comments on the draft permit

3. TECHNICAL ANALYSIS

3.1 Emission Unit and Control Device

Table 3.1 EMISSIONS UNIT AND CONTROL DEVICE INFORMATION

Emissions Unit/ID No.	Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No. and/or Description [a]
Hog-fuel boiler	Hurst H4-4040-300 Rated at 20,000 lb/hr steam	Multiclone Hurst HBC 600/300-MC	Hog-fuel boiler stack
Standby distillate oil-fired boiler	York Shipley Rated at 10,000 lb/hr steam	None	Standby boiler stack
Processes: P1 Deck saw P2 Ring debarker P3 Chop saw #1 P4 Rosser head debarker P5 Chop saw #2	NA	Walled funnel from sides of equipment down captures sawdust, bark, wood by-products. P2 also has a roof overhead.	Area or volume sources
P7 Chipper No. 1 P8 Chipper No. 2		None	
P9 Screen out		Lid on top, enclosed by lips on sides	
P10 Fines blower cyclone (inside)		None	
P11 Falcon hog		Inflow and outflow fully enclosed	
P12 & P13 Steam chamber No. 1 & 2 P15A&B Steam dryer with two stacks P17 Knife hog P18 Globe saw and cyclone		None	
Conveyors (all outside): TR2 Chain conveyor TR3 Two Vib, two belt conveyors TR4 Two chain conveyors TR7 Belt conveyors	NA	None	Area or volume sources
Bin to truck transfers: TR5 Front end loader TR8 Front end bucket TR9 Front end bucket TR10 Front end bucket	NA	None	Area or volume sources
Piles: ST2 Sawdust piles ST3 Fuel house (pile) ST4 Storage pile ST5 Bin (no bark) bunker ST6 Ash bunker	NA	None	Area or volume sources
Bins: ST1 Surge chip bin	NA	Fully enclosed gravity feed	Area or volume sources
Bins: ST7 Chip bin ST8 Bunker	NA	None	Area or volume sources
Sawmill, slicer, and clip/grade	NA	Indoors	Volume
Paved and unpaved roads	NA	None	Fugitive

[a] more information on stacks and area and volume sources can be found in Appendix C - the modeling memorandum

3.2 Emissions Inventory

Without permit limits, the facility's emissions exceed major source threshold for PM_{10} according to information in the technical memorandum for Tier II issued August 5, 1996. With the permit limits (e.g, throughput limit, using controls), the facility's potential to emit (PTE) is below major source threshold. The PTE is summarized in Table 3.2. Facility-wide emissions inventory (EI) was provided in the application. DEQ staff has reviewed, corrected, and accepted the EI though the control efficiencies for sources P1 through P5 were not well documented. The emissions from these sources (P1 through P5) are small enough and do not warrant remodeling. The EI can be found in Appendix B.

Table 3.2 EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS WITH PERMIT LIMITS [a, f]

Emissions Unit	PM_{10}		SO_2		NOx		CO		VOC		LEAD
	lb/hr (lb/day)[g]	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Point Sources Affected by this Permitting Action											
B1 Hog-fuel boiler	4.88 (117)	17.09	0.38	1.34	3.36	11.75	9.15	32.04	0.26	0.91	1.58 [b]
Standby distillate oil-fired boiler	0.11 (2.64)	0.10 [d]	4.02E-03 [e]	3.66E-03 [e]	0.66	0.60	0.16	0.15	6.59E-03	6.00E-03	0.11 [c]
Steam Veneer Dryer	1.22 (29.2)	3.04	---	---	---	---	6.39E-02	0.16	1.67	4.17	---
Total, Point Sources	---	20.22	---	1.34	---	12.35	---	32.35	---	5.09	---
Process Fugitive/Area/Volume Sources Affected by this Permitting Action											
Processes (excluding steam veneer dryer)	0.75 (14.81)	1.23	---	---	---	---	---	---	---	---	---
Transfers	0.45 (5.03) [h]	0.60	---	---	---	---	---	---	---	---	---
Storage (excluding piles) (including piles)	0.20 (3.06) (7.58)	1.47 2.13	---	---	---	---	---	---	---	---	---
Volatile Petroleum Sources	---	---	---	---	---	---	---	---	---	7.30E-04	---
Total, Area and Volume Sources (excluding piles emissions) (including piles)	(22.90) (27.42)	3.29 3.95	---	---	---	---	---	---	---	7.30E-04	---
Total, Point and Area and Volume Sources (excluding piles) (including piles)	---	**23.52** 24.18	---	**1.34**	---	**12.35**	---	**32.35**	---	**5.09**	1.69

[a] data are taken from the application (spreadsheet named CPV2008TIER2renewal041709.xls) unless otherwise stated.
[b] AP-42 Section 1.6, table 1.6-4, EF = 4.8E-5 lb/MMBtu. Calculated rate: $7.3x10^{-4}$ lb/hr, 7.3E-4 lb/hr * 3 * 30 * 24 = 1.58 lb/quarter
[c] AP-42 Section 1.3, EF = 1.51E-3 lb/10^3 gal. Calculated rate: lb/hr = 4.97E-5, lb/quarter = lb/hr * 3 * 30 * 24 = 1.08E-1 lb/quarter.
[d] It appears that it was modeled at 0.477 T/yr; assumed 8760 hr/yr for PM_{10}. Therefore, annual limit is not needed in the permit for PM_{10}. Other pollutants are still modeled at 60 x 10^3 gal/yr fuel usage limit.
[e] 0.05% or 500 ppm is used for SO_2 emissions estimation.
[f] Except for boilers, lb/hr emissions = annual throughput * EF / annual operating hours * 120%. More discussions can be found in section 4.10.27. T/yr emissions = annual throughput * EF /(2000 lb/T)
[g] max lb/hr x operating hr/day = lb/day
[h] The operating hours show in the spreadsheet are different from what were used to calculate max. lb/hr emissions rates. The operating hours used in the formula are used here to calculate lb/day emissions.

3.3 Ambient Air Quality Impact Analysis

The applicant has demonstrated compliance with NAAQS for the facility. Detailed ambient air quality analysis can be found in Appendix C. Table 3.3 provides the summary of the analysis.

TAPs compliance demonstration is not required because this is a Tier II renewal, and there is no emissions increase.

Table 3.3 FULL IMPACT ANALYSIS RESULTS FOR CRITERIA POLLUTANT(S)

Pollutant	Averaging Period	Modeled Design Concentration ($\mu g/m^3$)[b]	Background Concentration ($\mu g/m^3$)	Total Ambient Impact ($\mu g/m^3$)	NAAQS[c] ($\mu g/m^3$)	Percent of NAAQS
CO[a]	1-hour	243.4[g]	NA	NA	40,000	NA
	8-hour	70.8[g]	NA	NA	10,000	NA
PM_{10}[d]	24-hour	61.9	73	134.9	150	90%
	Annual	15.9	26	41.9	50	84%
SO_2[e]	3-hour	5.0[g]	NA	NA	1,300	NA
	24-hour	1.3[g]	NA	NA	365	NA
	Annual	0.2[g]	NA	NA	80	NA
NO_2[f]	Annual	3.1[h]	17	20.1	100	20%

[a.] Carbon monoxide
[b.] Micrograms per cubic meter
[c.] National ambient air quality standards
[d.] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micromcters
[e.] Sulfur dioxide
[f.] Nitrogen dioxide
[g] Impacts are below the significant contribution levels listed in Idaho Air Rules Section 006.102. NAAQS compliance is assured without the addition of any ambient background concentration due to these low impacts.
[h] Impact value taken from 10/31/08 submittal

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Bonner County; however, it is outside the boundary of the Sandpoint PM_{10} non-attainment area. Where the facility located is designated as attainment or unclassifiable for all criteria pollutants.

4.2 Permit to Construct (IDAPA 58.01.01.201)

The applicant has not applied for a PTC. This section does not apply.

4.3 Tier II Operating Permit (IDAPA 58.01.01.401)

This permitting action is a Tier II renewal in accordance with IDAPA 58.01.01.400.

4.4 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

With the permit limits (e.g., throughput limits, using controls), the facility's PTE is below major source threshold; therefore, the facility is not subject to Title V program.

4.5 PSD Classification (40 CFR 52.21)

With the permit limits (e.g., throughput limit, using controls), the facility's PTE is below PSD major source threshold; therefore, the facility is not subject to PSD program.

4.6 NSPS Applicability (40 CFR 60)

The hog-fuel fired boiler has a rated capacity of 20,000 lb/hr or 34 MMBtu/hr (calculated.) According to the information in the technical memorandum issued on August 5, 1996, it was constructed in 1988. The standby distillate oil-fired boiler has a rated capacity of 10,000 lb steam/hr or 17 MMBtu/hr (calculated.) According to the information in the technical memorandum issued on August 5, 1996, it was constructed in 1976. Both boilers were constructed prior to June 9, 1989; therefore, they are not subject to 40 CFR 60 Subpart Dc.

4.7 NESHAP Applicability (40 CFR 61)

The facility is not subject to any 40 CFR 61 requirements.

4.8 MACT Applicability (40 CFR 63)

The facility is not subject to 40 CFR 63 Subpart DDDD because the facility is not a major source of HAP emissions.

The facility is not subject to 40 CFR 63 Subpart QQQQQQ because the facility does not operate a wood preserving operation.

4.9 CAM Applicability (40 CFR 64)

The facility is not subject to Title V program; therefore, is not subject to CAM.

4.10 Permit Conditions Review

This section describes the permit conditions (PC) for this permit renewal.

Section 1 - PERMIT SCOPE

4.10.1 PC 1.1 states the purpose of this permitting action. PC 1.2 states which permit is superseded. PC 1.3 includes a table that lists regulated emissions units in this permit.

Section 2 - FACILITY-WIDE CONDITIONS

4.10.2 PCs 2.1 to 2.4 are requirements regarding fugitive emissions. A quarterly monitoring frequency has been used because the facility is relatively small.

4.10.3 PCs 2.5 and 2.6 are requirements regarding odors.

4.10.4 PCs 2.7 and 2.8 are requirements regarding visible emissions. Except for Hog-fuel Boiler, a quarterly inspection on visible emissions is required. The opacity monitoring for the Hog-fuel Boiler is specified in the Boilers Section.

4.10.5 PCs 2.9, 2.10, and 2.11 are regarding open burning, reporting and certification, and obligation to comply, respectively.

4.10.6 PC 2.12 is a grain-loading standard for fuel burning equipment.

The following operating and monitoring requirements ensure that the facility is in compliance with the standard:

For distillate oil-fired boiler:

- The fuel type used in the boiler is specified in the permit

For Hog-fuel Boiler:

- The fuel type used in the boiler is specified in the permit
- Hourly steaming rate of Hog-fuel Boiler and its monitoring method are specified in the permit
- Using multiclone to control emissions from the hog-fuel fired boiler and monitoring the multiclone operation of Hog-fuel Boiler are required in the permit
- Proper operation and maintenance of the control device (i.e., multiclone) of Hog-fuel Boiler is required in the General Provision of the permit
- Source testing of Hog-fuel Boiler to demonstrate compliance of the grain loading standard is required

Source test for the distillate oil-fired boiler is not required because it is a backup boiler, it is not used a lot, its fuel is relatively stable, and the following calculation shows that the boiler meets the grain loading standard.

(3.3×10^{-3} lb/gal, EF taken from AP-42 Tables 1.3-1 and 1.3-2) x (33 gal /hr) / 1934.0 (calculated flue gas volume at dscfm@3%O_2) x (7,000 gr/lb, unit conversion factor) x (1hr/60 min, unit conversion factor) = 0.0066 gr/dscf at 3% O_2 < 0.050 gr/dscf at 3% O_2

4.10.7 PC 2.13 is a general requirement regarding sulfur content in fuel oil. Because in the application, the EI and modeling for the standby distillate oil-fired boiler are based on sulfur content of 500 ppm, PC 3.4.1 specifies the sulfur content of the fuel for the standby distillate oil-fired boiler.

4.10.8 PC 2.14 requires the permittee to keep documentation to demonstrate compliance with fuel requirements in PCs 2.13 and 3.4.1.

Section 3 - BOILERS

4.10.9 PCs 3.1 and 3.2 describe the boilers and their emissions control.

4.10.10 PCs 3.3.1 and 3.3.2 establish daily PM_{10} emissions rates for the hog-fuel boiler and standby distillate oil-fired boiler, respectively. Based on modeling results in the application, the facility-wide ambient impact is 89.5% of the 24-hour PM_{10} NAAQS. PM_{10} emissions limits are established to ensure that the permittee is in compliance with the 24-hr PM_{10} NAAQS. The daily emissions of other criteria pollutants are inherently limited by the PM_{10} emissions limits.

The hog-fuel boiler is modeled at 4.88 lb/hr for PM_{10} emissions; the calculated daily PM_{10} emissions limit is: 4.882 lb/hr x 24 hr/day = 117 lb/day.

The standby distillate oil-fired boiler is modeled at 0.11 lb/hr for PM_{10}; the calculated daily PM_{10} emissions limit is: 0.11 lb/hr x 24 hr/day = 2.64 lb/day.

Accordance to the information in the application, the facility-wide ambient impact is 84% of the annual PM_{10} NAAQS. An annual PM_{10} emissions limit for the boiler is not necessary because it is inherently limited by the boiler's daily emissions limit. The following calculation shows how daily PM_{10} emissions limit inherently limits the annual PM_{10} emissions:

117.2 lb/day (daily limit) / 120% (the safety factor used when calculate hourly rate from annual rate) *

365 day/yr / (2000 lb/T) = 17.09 T/yr (what modeled)

4.10.11 An annual emissions limit for NO_X emissions is not necessary.

The facility-wide ambient impact for NO_X was modeled at the emissions rate of 0.6 tons per year or with annual fuel usage of 60,000 gallons per year (gal/yr) or with annual operating day of 76 days per year. The facility-wide ambient impact is 20% of annual NAAQS for NO_X.

The hourly fuel usage of this boiler is 33 gallons per hour as limited in the permit. If the boiler is operating at 8,760 hr/yr, the annual fuel usage will be 289 x 10^3 gal/yr, which is 4.8 times as what modeled (i.e., 60 x 10^3 gal/yr). The annual NO_X impact could be 3.1 $\mu g/m^3$ x 4.8 + 17 $\mu g/m^3$ = 32 $\mu g/m^3$. It is still below the NAAQS (i.e., 100 $\mu g/m^3$ for NO_X); therefore, annual emissions limit for NO_X is not necessary.

4.10.12 PC 3.3.3 states that "In absence of any other creditable evidence, compliance with emission limits is assured by complying with this permit's operating, monitoring and record keeping requirements." This PC is taken from DEQ's internal guidance for Emission Limits.

4.10.13 PC 3.4 limits the type of fuel used in each boiler. The EI and modeling analysis are based on the assumption that these fuel types are used in the boilers.

4.10.14 PC 3.5 limits the steam production of the hog-fuel boiler to ensure compliance with PM_{10} emissions limit in PC 3.3.1. The steaming rate is back calculated using AP-42 emissions factor (EF) and the modeled emissions rate:

Steaming rate limit = (4.882 lb PM_{10}/hr, modeled) / (1,700 Btu/lb steam, AP-42, A-29) / (0.32 lb PM_{10}/MMBtu, AP-42 Table 1.6-1) x (10^6 Btu/MMBtu, unit conversion factor) = 8,974 lb steam/hr

According to the applicant, the steaming rate stays the same under normal operation. When the boiler meets the hourly limit, it meets the daily limit, vice versa. 8,974 lb/hr * 24 hr/day = 215,375 lb/day.

The facility may use source test data obtained during this permit term to revise the emissions factor used in the calculation, and consequently revise the steaming rate through a permit revision.

4.10.15 PC 3.6 limits the daily fuel usage of the standby distillate oil-fired boiler to ensure compliance with PM_{10} emissions limit in PC 3.3.2. The daily fuel usage is back calculated using AP-42 emissions factor (EF) and modeled emissions rate:

Hourly fuel usage = (0.109 lb PM_{10}/hr, modeled) / (3.3 lb PM_{10}/1,000 gal, AP-42 Tables 1.3-1 and 1.3-2) = 33 gal/hr

Daily fuel usage = 33 gal/hr x 24 hr/day = 792 gal/day

According to the applicant, the steaming rate stays the same under normal operation. When the boiler meets the hourly limit, it meets the daily limit, vice versa.

4.10.16 PC 3.7 and General Provision 2 require proper operation and maintenance of Hog-fuel Boiler multiclone to ensure compliance with emissions limits in PCs 2.7, 2.12, and 3.3.1. The permit condition is developed in accordance with DEQ's internal guidance for multiclone. However, minimum pressure drop requirement is not included in the permit because pressure drop across the multiclone is not in direct proportion to control efficiency of the multiclone.

4.10.17 PC 3.8 specifies the configuration of the veneer dryer stacks.

The two stacks of the veneer dryer were previously modeled as a single stack that was equipped with a raincap. The facility was not able to demonstrate compliance with 24-hr PM_{10} NAAQS with a raincap.

To be in compliance with 24-hr PM_{10} NAAQS, according to information provided by the applicant, the raincaps of the veneer dryer stacks have been removed. The veneer dryer emission unit was remodeled with two vertical stacks each with uninterrupted flow; the facility is in compliance with the 24-hr PM_{10} NAAQS.

4.10.18 PC 3.9 requires monitoring of hog-fuel boiler steaming rate to demonstrate compliance with PC 3.5.

4.10.19 PC 3.10 requires monitoring of fuel usage in the standby distillate oil-fired boiler. Compliance with fuel usage limit of 792 gal/day (i.e., 33 gal/hr, 24-hour average) is important because at the standby boiler's design capacity of 89 gal/hr, 24-hr average, compliance with NAAQS is not demonstrated.

4.10.20 PC 3.11 requires monitoring of the multiclone operation of Hog-fuel Boiler. The language was taken from internal guidance for Emission Limits.

4.10.21 PC 3.12 is an opacity monitoring requirement for hog-fuel boiler to demonstrate compliance with operating limit in PC 2.7. The PTE of the hog-fuel boiler for PM_{10} is greater than 10 tons per year; following DEQ's monitoring guidance, a monthly opacity monitoring is required. Monthly monitoring appears adequate for this facility because the opacity was 5% during the source test conducted on August 24, 2005.

See/no see opacity monitoring in PC 2.8 is for a stack that has no visible emissions at normal operation. See/no see monitoring is not appropriate for hog-fuel boiler because the hog-fuel boiler has opacity reading at normal operation. Therefore, for the hog-fuel boiler, a monthly method 9 opacity reading is required in the permit.

4.10.22 PC 3.13 requires source test to demonstrate and verify compliance with emissions limits in PCs 2.7, 2.12, and 3.3.1.

The most recent source test for PM grain loading standard was conducted on August 24, 2005. The facility is required to conduct another source test within five years per the existing permit condition. The next source test is due August 24, 2010, that is specified in the permit.

After considering the factors that the facility-wide impact level is 89.5% of NAAQS for 24-hr PM_{10}, the PTE of the hog-fuel boiler for PM_{10} is 11.7 T/yr, and the facility does not have historical testing data for PM_{10} emissions; PC 3.13 requires the permittee to conduct source test using tier approach.

4.10.23 PCs 4.1 and 4.2 describe the manufacturing processes and their emissions control.

4.10.24 PC 4.3.1 establishes daily and annual PM_{10} emissions rates for the steam veneer dryer to ensure compliance with 24-hr and annual PM_{10} NAAQS. The facility-wide PM_{10} ambient impact is 89.5% of 24-hr NAAQS and 83.6% of annual NAAQS according to the information in the application.

4.10.25 PC 4.3.2 establishes daily and annual PM_{10} emissions rates from the process, transfer, and storage (including emissions from piles) to ensure compliance with 24-hr and annual PM_{10} NAAQS. They are area or volume sources. Detailed calculations can be found in the spreadsheet submitted by the applicant and with DEQ's calculations/corrections.

For PC 4.3.2, total PM_{10} emissions limit of 3.96 T/yr from process, transfer, and storage does not include emissions from the veneer dryer because the veneer dryer has its own limit of 3.04 T/yr under PC 4.3.1.

The operating hours shown in the spreadsheet are different from what were used to calculate max. lb/hr emissions rates. The operating hours used in the formula are used here to calculate lb/day emissions. For PC 4.3.2, it is calculated to be 27.4 lb/day.

4.10.26 PC 4.3.3 states that "In absence of any other creditable evidence, compliance with emission limits is assured by complying with this permit's operating, monitoring and record keeping requirements." This PC is taken from DEQ's internal guidance for Emission Limits.

4.10.27 According to the information in the process flow chart and material balance spreadsheet in the application, limiting the throughputs of the Ring Debarker and veneer dryer will limit the materials go through the process, the transfer, and the storage of the operation; therefore, limit the emissions from the operations.

The manufacturing operations include:

- Sawmill and associated equipment to produce cants
- Steam chambers, veneer slicer, veneer dryer, and associated equipment to convert cants, either from on site or off-site, to veneer
- Wood-waste handling system to handle, transport, and store wood-waste

Limiting log throughput of the Ring Debarker limits the amount of materials processed in the sawmill and in its associated equipment; therefore, limits the emissions from these emissions sources.

Limiting throughput of the steam veneer dryer limits the emissions from the steam chambers, the veneer slicer, the steam veneer dryer, and the associated equipment.

Both throughput limits of the Ring Debarker and the steam veneer dryer limit the emissions associated with the handling, transport and storage of wood-waste.

PCs 4.4 and 4.5 impose daily and annual production rates for the Ring Debarker and the steam veneer dryer, respectively. As discussed above, these production limits inherently limit production rates of the other processes.

In the application, the maximum hourly emissions were estimated using the following method: Annual throughput limit / annual operation hours x 120%. According to the applicant, the processes

are either operated at maximum capacity or not operated. The applicant claims that the aforementioned hourly emissions estimation is reasonable for their processes.

The daily throughput limits are calculated as:

(14,000,000 board feet/yr) / (4,000 operation hours/yr) x (20 hours/day, modeled) x (120% factor) = 84,000 board feet/day = 84 thousand board feet/day

(4,500 thousand square feet/yr of veneer at its equivalent 3/8 inch thickness) / (6,000 operating hours/yr) x (24 hours/day) = 18 thousand square feet/day of veneer at equivalent 3/8" thickness

The annual throughput limits in PCs 4.4.2 and 4.5.2 are necessary because they are used to calculated hourly emissions rates that are modeled to demonstrate compliance with the 24-hr PM_{10} NAAQS. In addition, these annual throughputs are based on the operating hours of 4,000 hours for sawmill and 6,000 hours for the veneer dryer rather than 8,760 hours per year. Without these annual throughput limits, the facility-wide ambient impact could exceed annual PM_{10} NAAQS.

4.10.28 PC 4.6 specifies some processes to be enclosed or be indoor activities because these controls are taken into account in the modeling.

4.10.29 PCs 4.7 and 4.8 require the permittee to monitor throughputs to demonstrate compliance with PCs 4.4 and 4.5.

Section 5 - SUMMARY OF EMISSION RATE LIMITS

4.10.30 Table 5.1 summarizes the emissions limits in this permit.

Section 6 - TIER II PERMIT TO OPERATE GENERAL PROVISIONS

4.10.31 Section 6 includes general provisions, taken from current template, applying to the permittee.

5. PERMIT FEES

In accordance with IDAPA 58.01.01.407.01, the facility is subject to a processing fee of $10,000.

6. PUBLIC COMMENT

According to IDAPA 58.01.01.404.04, an opportunity for public comment period is not required because this permitting action does not increase emissions.

Appendix A – AIRS Information

AIRS/AFS Facility-wide Classification Form

Facility Name:	Ceda-Pine Veneer, Inc.		
Facility Location:	Samuels, Idaho		
Facility ID:	017-00036	**Date:**	September 11, 2009
Project/Permit No.:	T2-2008.0157	**Completed By:**	Shawnee Chen

☒ Check if there are no changes to the facility-wide classification resulting from this action. (compare to form with last permit)

Appendix B – Emissions Inventory

BOILER EMISSIONS

B-1 HURST HOG FUEL BOILER

Pollutant	Emission Factor	EF Units	Permit Req	Units	Emissions (lbs/yr)	Emissions (tons/yr)	(24-7-50) Emissions (lb/hr)	(+20%) MAX Emission (lb/hr)
Particulate*	1.99	lb/hr	8,400	hrs/yr	16,716.0	8.36	1.93E+00	2.32E+00
PM 10 (AP 42)	0.32	lb/MMBTU	106,800	MMBTU	34,176.0	17.09	4.07E+00	4.88E+00
SO2	0.025	lb/MMBTU	106,800	MMBTU	2,670.0	1.34	3.18E-01	3.81E-01
CO	0.60	lb/MMBTU	106,800	MMBTU	64,080.0	32.04	7.63E+00	9.15E+00
NOx	0.22	lb/MMBTU	106,800	MMBTU	23,496.0	11.75	2.80E+00	3.36E+00
TOC	0.039	lb/MMBTU	106,800	MMBTU	4,165.2	2.08	4.96E-01	5.95E-01
VOC's	0.017	lb/MMBTU	106,800	MMBTU	1,815.6	0.91	2.16E-01	2.59E-01
All other HAPs	2.26E-02	lb/MMBTU	106,800	MMBTU	2,415.6	1.21	2.88E-01	3.45E-01
Methane	0.021	lb/MMBTU	106,800	MMBTU	2,242.8	1.12E+00	2.67E-01	3.20E-01
Formaldehyde	0.0044	lb/MMBTU	106,800	MMBTU	469.9	2.35E-01	5.59E-02	6.71E-02
Benzene	0.0042	lb/MMBTU	106,800	MMBTU	448.6	2.24E-01	5.34E-02	6.41E-02
Ethylbenzene	0.000031	lb/MMBTU	106,800	MMBTU	3.3	1.65E-03	3.94E-04	4.73E-04
Napthalene	0.000097	lb/MMBTU	106,800	MMBTU	10.4	5.18E-03	1.23E-03	1.48E-03
1,1,1, Trichlor	0.000031	lb/MMBTU	106,800	MMBTU	3.3	1.65E-03	3.94E-04	4.73E-04
Toluene	0.00092	lb/MMBTU	106,800	MMBTU	98.3	4.91E-02	1.17E-02	1.40E-02
o-xylene	0.000025	lb/MMBTU	106,800	MMBTU	2.7	1.34E-03	3.18E-04	3.81E-04
Acenapthene	0.00000281	lb/MMBTU	106,800	MMBTU	0.1	4.86E-05	1.16E-05	1.39E-05
Acenaphthylene	0.000005	lb/MMBTU	106,800	MMBTU	0.5	2.67E-04	6.36E-05	7.63E-05
Anthracene	0.000003	lb/MMBTU	106,800	MMBTU	0.3	1.60E-04	3.81E-05	4.58E-05
Benzo(a)Anthracene	0.0000000665	lb/MMBTU	106,800	MMBTU	0.0	3.47E-06	8.26E-07	9.92E-07
Benzo perylene	0.0000000693	lb/MMBTU	106,800	MMBTU	0.0	4.97E-06	1.18E-06	1.42E-06
Chrysene	0.0000000338	lb/MMBTU	106,800	MMBTU	0.0	2.03E-06	4.83E-07	5.80E-07
Dibenzo anthracene	0.0000000281	lb/MMBTU	106,800	MMBTU	0.0	4.89E-07	1.16E-07	1.39E-07
Fluoranthene	0.0000016	lb/MMBTU	106,800	MMBTU	0.2	8.54E-05	2.03E-05	2.44E-05
Fluorene	0.0000034	lb/MMBTU	106,800	MMBTU	0.4	1.82E-04	4.32E-05	5.19E-05
Indo pyrene	0.0000000887	lb/MMBTU	106,800	MMBTU	0.0	4.65E-06	1.11E-06	1.33E-06
Phenanthrene	0.000007	lb/MMBTU	106,800	MMBTU	0.7	3.74E-04	8.90E-05	1.07E-04
Pyrene	0.000031	lb/MMBTU	106,800	MMBTU	3.3	1.65E-03	3.94E-04	4.73E-04
Acetaldehyde	0.00083	lb/MMBTU	106,800	MMBTU	88.6	4.43E-02	1.06E-02	1.27E-02
Propionaldehyde	0.000261	lb/MMBTU	106,800	MMBTU	6.5	3.26E-03	7.76E-04	9.31E-04
Acrolein	0.004	lb/MMBTU	106,800	MMBTU	427.2	2.14E-01	5.09E-02	6.10E-02
Phenol	0.000051	lb/MMBTU	106,800	MMBTU	5.4	2.72E-03	6.48E-04	7.78E-04
MEK	0.0000054	lb/MMBTU	106,800	MMBTU	0.6	2.88E-04	6.87E-05	8.24E-05
						76.67	18.26	21.91 TOTAL

Stack temp	325
Stack elev	40
Stack diam	2.50
exit flow acfm	15,263

	ESTIMATE
max Green tons burned	13,350
MAX BTU/gr lb value	4000.00
BTU/gr ton value	8,000,000
MMBTU/yr	106,800

Use conserv dry season o

Notes: HAPS listed here are potentially emitted from other on-site sources too (making the total/site a larger number).
All other EFs based on AP-42 Table 1.6 Wood/bark fueled, w/ multicone
* Current Source test results

B-2 STAND-BY DIESEL BOILER

Pollutant	Emission Factor	EF Units	Permit Req	Units	Emissions (lbs/yr)	Emissions (tons/yr)	(24-7-13) Emissions (lb/hr)	(+20%) MAX Emission (lb/hr)	
Particulate	3.3	lb/10 ^3 gal	60	gal10^3/yr	198.0	0.10	9.07E-02	0.11	Table 1.3-1 Distillate fred + 1.3-2 No 2
PM 10	3.3	lb/10 ^3 gal	60	gal10^3/yr	198.0	0.10	9.07E-02	0.11	
SOx	0.122	lb/10 ^3 gal	60	gal10^3/yr	7.3	0.00	3.35E-03	0.00	Table 1.3-1 Distillate fred
CO	5	lb/10 ^3 gal	60	gal10^3/yr	300.0	0.15	1.37E-01	0.16	Table 1.3-1 Distillate fred
NOx	20	lb/10 ^3 gal	60	gal10^3/yr	1,200.0	0.60	5.49E-01	0.66	Table 1.3-1 Distillate fred
TOC (VOC's)	0.2	lb/10 ^3 gal	60	gal10^3/yr	12.0	0.006	5.49E-03	0.007	Table 1.3-2 Distillate fred, non methane
All other HAPs		lb/10 ^3 gal	60	gal10^3/yr	0.00E+00	0.00E+00	0.00E+00	0.000	
Methane	0.052	lb/10 ^3 gal	60	gal10^3/yr	3.12E+00	1.56E-03	1.43E-03	1.71E-03	Table 1.3-2 Distillate fred
Formaldehyde	4.80E-02	lb/10 ^3 gal	60	gal10^3/yr	2.88E+00	1.44E-03	1.32E-03	1.58E-03	Table 1.3-8 avg of Distillate fired
Benzene	2.14E-04	lb/10 ^3 gal	60	gal10^3/yr	1.28E-02	6.42E-06	5.88E-06	7.05E-06	Table 1.3-9 Fuel oil
Ethylbenzene	6.36E-05	lb/10 ^3 gal	60	gal10^3/yr	3.82E-03	1.91E-06	1.75E-06	2.10E-06	Table 1.3-9 Fuel oil
Napthalene	1.13E-03	lb/10 ^3 gal	60	gal10^3/yr	6.78E-02	3.39E-05	3.10E-05	3.73E-05	Table 1.3-9 Fuel oil
1,1,1, Trichlor	2.36E-04	lb/10 ^3 gal	60	gal10^3/yr	1.42E-02	7.08E-06	6.48E-06	7.78E-06	Table 1.3-9 Fuel oil
Toluene	6.22E-03	lb/10 ^3 gal	60	gal10^3/yr	3.72E-01	1.86E-04	1.70E-04	2.04E-04	Table 1.3-9 Fuel oil
o-xylene	1.09E-04	lb/10 ^3 gal	60	gal10^3/yr	6.54E-03	3.27E-06	2.99E-06	3.59E-06	Table 1.3-9 Fuel oil
Acenapthene	2.11E-05	lb/10 ^3 gal	60	gal10^3/yr	1.27E-03	6.33E-07	5.80E-07	6.96E-07	Table 1.3-9 Fuel oil
Acenaphthylene	2.53E-07	lb/10 ^3 gal	60	gal10^3/yr	1.52E-05	7.59E-09	6.95E-09	8.34E-09	Table 1.3-9 Fuel oil
Anthracene	1.22E-06	lb/10 ^3 gal	60	gal10^3/yr	7.32E-05	3.66E-08	3.35E-08	4.02E-08	Table 1.3-9 Fuel oil
Benz(a)Anthracene	4.01E-06	lb/10 ^3 gal	60	gal10^3/yr	2.41E-04	1.20E-07	1.10E-07	1.32E-07	Table 1.3-9 Fuel oil
Benzo(a)Fluoranthene	1.48E-06	lb/10 ^3 gal	60	gal10^3/yr	8.88E-05	4.44E-08	4.07E-08	4.88E-08	Table 1.3-9 Fuel oil
Benzo perylene	2.26E-06	lb/10 ^3 gal	60	gal10^3/yr	1.36E-04	6.78E-08	6.21E-08	7.45E-08	Table 1.3-9 Fuel oil
Chrysene	2.38E-06	lb/10 ^3 gal	60	gal10^3/yr	1.43E-04	7.14E-08	6.54E-08	7.85E-08	Table 1.3-9 Fuel oil
Dibenzo anthracene	1.67E-06	lb/10 ^3 gal	60	gal10^3/yr	1.00E-04	5.01E-08	4.59E-08	5.51E-08	Table 1.3-9 Fuel oil
Fluoranthene	4.84E-06	lb/10 ^3 gal	60	gal10^3/yr	2.90E-04	1.45E-07	1.33E-07	1.60E-07	Table 1.3-9 Fuel oil
Fluorene	4.47E-06	lb/10 ^3 gal	60	gal10^3/yr	2.68E-04	1.34E-07	1.23E-07	1.47E-07	Table 1.3-9 Fuel oil
Indo pyrene	2.14E-06	lb/10 ^3 gal	60	gal10^3/yr	1.28E-04	6.42E-08	5.88E-08	7.05E-08	Table 1.3-9 Fuel oil
Phenanthrene	1.05E-05	lb/10 ^3 gal	60	gal10^3/yr	6.30E-04	3.15E-07	2.88E-07	3.46E-07	Table 1.3-9 Fuel oil
Pyrene	4.25E-06	lb/10 ^3 gal	60	gal10^3/yr	2.55E-04	1.28E-07	1.17E-07	1.40E-07	Table 1.3-9 Fuel oil
*OCDD	3.16E-09	lb/10 ^3 gal	60	gal10^3/yr	1.86E-07	9.30E-11	8.52E-11	1.02E-10	Table 1.3-9 Fuel oil
						0.96	0.88	1.06	TOTAL

Rated	10,000	
Stack temp	415	
Stack elev	28	
Stack diam	1.50	
exit flow acfm	1,500	

S= .0005 0.0005 Per Coleman Oil, Lewiston (supplier) Diesel is 500 ppm sulfur
Note: Diesel boiler tag info: 89 gal/hr at full 10,000 lbs stm/hr

Therefore use 89 gal/hr x (24 x 7 x 2)hrs = 29,904 gal/yr.
To be conservative... ask for double that in application: 29.9*2 = 59.8 or 60 10^3 gal/yr

PROCESS EMISSIONS

Source Name		Throughput	Material	Units	Hours	Emission Control	Op Hours	EMISSION FACTORS																	
								PM	PM10	CO	THC	VOCs	*HAPS (lb/unit) Other HAPs	Benzene	Toluene	o-xylene	phenol	Methane	Methanol	Formald	etetadehyde	lyropionaldehyde	MEK	Acrolein
Deck Saw	P1	431	logs	Gtons logs	20-4-50	90%	4,000	0.350	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ring debarker(Nicholson)	P2	215,385	logs	Gtons logs	20-4-50	95%	4,000	0.024	0.011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chop saw #1	P3	183,077	logs	Gtons logs	20-4-50	95%	4,000	0.350	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rosser head debarker	P4	45,769	logs	Gtons logs	20-4-50	90%	4,000	0.024	0.011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chop saw #2	P5	13,731	logs	Gtons logs	20-4-50	90%	4,000	0.350	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chipper #1	P7	2,220	chips	Gtons	20-4-50		4,000	0.024	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chipper #2	P8	111	chip overs	Gtons	20-4-50		4,000	0.024	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screen out	P9	881	chips	BDT	20-4-50	75%	4,000	0.350	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fines blower cyclone	P10	NA - inside	fines	inside - no external exhaust	20-4-50		4,000	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Falcon hog	P11	39,173	woodwaste	Gtons	20-4-50	90%	4,000	0.024	0.011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Steam Chamber #1	P12	3,750	logs	Mbf	24-7-50		8,400	0.00	0.000	0.00	0.00	0.00	0.065	0.00	0.00	0.00	0.000	0.000	0.007	0.000	0.005	0.000	0.0000	0.0000
Steam Chamber #2	P13	3,750	logs	Mbf	24-7-50		8,400	0.00	0.000	0.00	0.00	0.00	0.065	0.00	0.00	0.00	0.000	0.000	0.007	0.000	0.005	0.000	0.0000	0.0000
Steam Veneer Dryer	P15A&B	4,500	veneer	MSF 3/8"	24-5-50		6,000	1.35	1.350	0.07	1.66	1.66	1.447	0.001	0.001	0.001	0.010	0.000	0.0490	0.0163	0.0216	0.00	0.0000	0.00
Knife hog	P17	4,590	woodwaste	Gtons	24-5-50		6,000	0.024	0.011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Globe saw and cyclone	P18	100	dry trim	BDT	8-2-50		800	0.20	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Veneer dryer dry end stack P15A
Veneer dryer green end stack P15B

Controls: P1 - P6 walled funnel from sides of equipment down captures sawdust, bark, wood by-products ... which are green, wet, and heavy. P2 also has a roof overhead. Capture is efficient, captured material has value as hog fuel or saleable material
The saws are installed so that the blade rotation throws sawdust and any wood by-products deeply into the walled chute to ensure capture of that material for use as fuel or a saleable product.
P8 lid on top, enclosed by lips on sides
P11 pillow and cullow fully enclosed
P12 and P13 are insignificant because they represent venting from slight steaming of logs to allow them to be cut into fine strips for veneer

EMISSIONS (lb/yr)

			Operating hours	PM	PM10	CO	THC	VOCs	*HAPS (lbs) Other HAPs	Benzene	Toluene	o-xylene	phenol	Methane	Methanol	Formald	etetadehyde	ropionaldehyde	MEK	Acrolein
Deck Saw	P1		4,000	15	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ring debarker	P2		4,000	258	118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chop saw #1	P3		4,000	3,204	1,831	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rosser head debarker	P4		4,000	110	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chop saw #2	P5		4,000	481	275	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chipper #1	P7		4,000	53	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chipper #2	P8		4,000	3	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screen out	P9		4,000	77	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fines blower cyclone	P10		4,000	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Falcon hog	P11		4,000	94	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Steam chamber #1	P12		8,400	0.00	0.00	0.0	0.0	0.0	245.280	-	-	-	-	-	27	-	18	-	-	-
Steam chamber #2	P13		8,400	0.00	0.00	0.0	0.0	0.0	245.280	-	-	-	-	-	27	-	18	-	-	-
Steam Dryer	P15A&B		6,000	6,075	6,075	319.5	6976.0	6343.0	5611.725	3	5	6	43	-	221	89	97	11	-	6
Knife hog	P17		6,000	110	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Globe saw cyclone	P18		800	20	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		TOTAL lb/yr		10,500	6,537	320	6,976	6,343	7,002	2.7	5.0	6.3	43.2	-	275.3	68.9	132.5	10.6	-	5.5
		TOTAL ton/yr		5.3	4.3	0.2	3.5	4.2	3.5	0.0	0.0	0.0	0.0	-	0.1	0.0	0.1	0.0	-	0.0

Total HAPs (t/yr) 3.78

Max EMISSIONS (lb/hr) 120% of average hourly

			Operating hours	PM	PM10	CO	THC	VOCs	*HAPS (lbs) Other HAPs	Benzene	Toluene	o-xylene	phenol	Methane	Methanol	Formald	etetadehyde	ropionaldehyde	MEK	Acrolein
Deck Saw	P1		4,000	0.0045	0.0026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ring debarker	P2		4,000	0.0775	0.0366	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chop saw #1	P3		4,000	0.9612	0.5492	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rosser head debarker	P4		4,000	0.0330	0.0151	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chop saw #2	P5		4,000	0.1442	0.0824	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chipper #1	P7		4,000	0.0160	0.0072	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chipper #2	P8		4,000	0.0008	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screen out	P9		4,000	0.0231	0.0132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fines blower cyclone	P10		4,000	0.0000	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Falcon hog	P11		4,000	0.0282	0.0129	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Steam chamber #1	P12		8,400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0039	0.0000	0.0026	0.0000	0.0000	0.0000
Steam chamber #2	P13		8,400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0039	0.0000	0.0026	0.0000	0.0000	0.0000
Steam Dryer	P15A&B		6,000	1.2150	1.2150	0.0639	1.3950	1.6686	1.3023	0.0006	0.0010	0.0013	0.0086	0.0000	0.0441	0.0138	0.0194	0.0022	0.0000	0.0012
Knife hog	P17		6,000	0.0220	0.0101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Globe saw cyclone	P18		800	0.0300	0.0240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		TOTAL lb/hr		2.56	1.97	0.06	1.40	1.67	1.4E+00	6.3E-04	9.9E-04	1.3E-03	8.6E-03	0.0E+00	5.2E-02	1.4E-02	2.4E-02	2.2E-03	0.0E+00	1.2E-03

Total HAPs (lb/hr) 1.5E+00

TRANSFER/CONVEYOR CALCULATIONS

Throughout this worksheet and El: Maximum daily rate is 120% of average hourly

Conveyors (all outside)

Name	Code	Wind Speed (MPH)	Moisture (%)	Throughput (BDT tons/yr)	PM Emission Factor *	PM 10 Emission Factor *	PM (ton/yr)	PM 10 (tons/yr)	Operating (hr-day-day/wk-wk/yr)	Type of Material	PM (lb/hr)	PM 10 (lb/hr)	Height (ft)	Columns added by DEQ: PM 10 lb/day	Operating (hr/day-day/wk-wk/yr)
Infeed Deck	TR 1	9	50	107,692	NA Legs	NA legs	0.00	0.00	20-4-50	Legs	0.00	0.000	15	0.00	17-6-50
Chain Conveyor	TR 2	9	50	19,587	0.02393	0.00837	0.23	0.08	20-4-50	Bark	0.08	0.039	15	0.66	17-6-50
2 Vib, 2 belt conveyor	TR 3	9	50	19,587	0.02393	0.00837	0.23	0.08	20-4-50	Misc Wood	0.08	0.039	6	0.66	17-6-50
2 chain conveyors	TR 4	9	50	19,587	0.02393	0.00837	0.23	0.08	20-4-50	Hog Fuel	0.97	0.033	20	0.56	17-7-50
Belt conveyers	TR 7	9	5	2,043	0.22773	0.21034	0.23	0.21	20-4-50	Trim ends	2.23	0.258	15	2.06	8-5-50
													total:	3.94	

DEQ note: The operating hours are taken from the formula used for estimating lb/hr rates. The operating hours used in the formula are different from what listed in column H.

TR1 is insignificent because it handles only long logs. Any emissions are large chunks, not PM10, and are wet, green, and heavy enough to fall immediately

Note: Drops are sheeted in on 3 sides at drops. (assume 50% efficiency) Total 0.94 0.46

moisture content sawdust = 56 %
moisture content bark = 50 %
moisture content chips = 47 %
moisture content shavings = 10 %
moisture content veneer = 5 %

Bin to Truck Transfers

Name	Code	Moisture (%)	PM Em. Factor (lb/hr)	PM10 Em. Factor (lb/hr)	Throughput BDT	Hr/yr	Opr (hr/day-day/wk-wk/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM (lb/hr)	PM 10 (lb/hr)	Columns added by DEQ: PM 10 lb/day	Operating (hr/day-day/wk-wk/yr)
Front End loader	TR 5	50	0.04785	0.01675	6,675	2,500	10-5-50	0.06	0.02	0.030	0.012	0.17	14-6-50
Front End Bucket	TR 8	10	0.45546	0.15941	4,085	1,200	6-5-50	0.27	0.10	0.137	0.055	0.77	14-6-50
Front End Bucket	TR 9	50	0.04785	0.01675	3,408	1,200	16-5-50	0.03	0.01	0.014	0.006	0.08	14-6-50
Front End Bucket	TR 10	50	0.04785	0.01675	765	1,200	6-5-50	0.03	0.01	0.014	0.006	0.08	14-7-50
							Total	0.36	0.13	total:		1.09	

Operating DEQ note: The operating hours are taken from the formula used for estimating lb/hr rates. The operating hours used in the formula are different from what listed in column H.

* Use AP 42 13.2.4 Aggregate Handling
E=k(.0032)*((u/5)**1.3)/((M/2)**1.4)
particulate matter multiplier (k) = .35 for pm 10 k=1 for PM
average wind speed = 9 mph

at 50% moisture content	PM-10 EF =	0.0167 lbs/ton	PM EF = 0.0479 lbs/ton
at 47% moisture content	PM-10 EF =	0.0183 lbs/ton	PM EF = 0.0522 lbs/ton
at 43% moisture content	PM-10 EF =	0.0207 lbs/ton	PM EF = 0.0591 lbs/ton
at 10% moisture content	PM-10 EF =	0.1594 lbs/ton	PM EF = 0.4555 lbs/ton
at 5% moisture content	PM-10 EF =	0.4207 lbs/ton	PM EF = 1.2020 lbs/ton

STORAGE CALCULATIONS

PILES

Name	Code	Width Ft.	Length Ft.	Height Ft.	Area Acres	Material Type	TSP lb/acre/day Factor *	TSP tons/yr	PM 10 lb/acre/day Factor *	PM 10 tons/yr	Operating (hr/day-day/wk-wk/yr)	Hours	PM (lbs/hr)	PM 10 (lbs/hr)	Columns added by DEQ: PM 10 lb/day
Sawdust	ST 2	130	115	8	0.34	Sawdust	9.35	0.59	4.68	0.29	20-7-50	7000	0.2008	0.1004	2.01
Fuel House (pile)	ST 3	140	120	110	0.39	Fuel	9.35	0.66	4.68	0.33	20-7-50	7000	0.2256	0.1128	2.26
Storage Pile	ST 4	75	20	10	0.03	Fuel	9.35	0.06	4.68	0.03	20-7-50	7000	0.0201	0.0101	0.20
Bin (no bark) Bunker	ST 5	15	23	6	0.01	Fuel	9.35	0.01	4.68	0.01	20-7-50	7000	0.0046	0.0023	0.05
Ash Bunker	ST 6	12	8	4	0.0022	Ash	3.90	0.002	5.2	0.002	2-7-50	700	0.0054	0.0072	0.01
															4.53

* Use AP 42 Table 8.19.1

1.32 0.66

Columns added by DEQ

BINS

Name	Code	Throughput (BDT/yr)	PM E. Factor (lb/ton)	PM 10 E. Factor (lb/ton)	Material Type	Max Transf **(BDT/hr)	Avg Trans (BDT/hr)	Effici	PM (tons/yr)	PM 10 (tons/yr)	Operating (hr/day-day/wk-wk/yr)	Hours	w/effic PM (lbs/hr)	w/effic PM 10 (lbs/hr)	w/effic PM 10 lb/day
Surge chip Bin	ST 1	881	1	0.58	Chips	0.53	0.44	95%	0.44	0.3	10-4-50	2000	0.0264	0.0153	0.15
Chip Bin	ST 7	3,408	1	0.58	Chips	1.02	0.85	75%	1.70	1.0	16-5-50	4000	0.2556	0.1482	2.37
Bunker	ST 8	765	1	0.58	waste	0.23	0.19	75%	0.38	0.2	16-5-50	4000	0.0574	0.0333	0.53
													total:		3.05

EFs from IDEQ Efs for the Wood Products Industry - Target Box

Bin Total 2.53 1.47 0.3394 0.1968
Bin w/effic: 0.1263 0.0733

** assume 20% greater than average rate

ST1 fully enclosed gravity feed
ST8 big materia, straight from steaming, very wet
ST7 large chips only (all fines screened out)

Note: All storage bins are enclosed, with small vent openings for air, (assume 95% effic).

	PM	PM10
All Storage combined (T/yr) w/effic:	1.44	0.08

Appendix C – Ambient Air Quality Impact Analysis

MEMORANDUM

DATE: July 13, 2009

TO: Shawnee Chen, P.E., Senior Air Quality Engineer, Air Program

FROM: Darrin Mehr, Air Quality Analyst, Air Program

PROJECT NUMBER: T2-2009.0005

SUBJECT: Modeling Demonstration for Ceda-Pine Veneer Tier II Operating Permit for Their Facility in Samuels, Idaho

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1.0 SUMMARY

Ceda-Pine Veneer (Ceda-Pine) submitted an application for a Tier II Operating Permit (Tier II OP) renewal on May 20, 2008, and a resubmittal on January 13, 2009.

Modeling submittals in support of this project were received on:

- May 20, 2008,
- September 9, 2008,
- November 3, 2008,
- December 3, 2008,
- January 13, 2009, and
- April 21, 2009.

IDAPA 58.01.01.403.02 (Idaho Air Rules Section 403.02) requires the facility to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). No PTC modifications were requested for this project.

CJ Environmental performed the ambient air dispersion modeling demonstration for this project on behalf of Ceda-Pine. The modeling analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed that predicted pollutant concentrations from emissions associated with the facility were below applicable NAAQS at all receptor locations.

Table 1 presents key assumptions and results that should be considered in the development of the permit.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	**Explanation/Consideration**
PM_{10} Emissions and Impacts Effective control of PM_{10} emissions for several process sources and storage bins was used to reduce PM_{10} emission rates used in the modeling demonstration. The controls were important for the PM_{10}, 24-hour average NAAQS compliance. The veneer dryer emission unit was remodeled with two vertical stacks each with uninterrupted flow (Point Source IDs : P15A and P15B). These two stacks were previously modeled as a single stack (P15) that was equipped with a raincap. A substantial increase in the estimated PM_{10} emission rate was deemed appropriate following EI review by the permit writer. A DEQ sensitivity analysis was performed using a PM_{10} emission rate of 0.9 lb/hr for Source P15 per this project's permit writer's emission estimate. The sensitivity analysis resulted in predicted ambient impacts that exceeded the PM_{10} 24 hour NAAQS. Maximum predicted ambient impacts were 281 $\mu g/m^3$, 24-hour average. Ceda-Pine Veneer's April 21, 2009 submittal of a revised emission inventory and a revised modeling demonstration represented changes to the veneer dryer values. CedaPine modeled PM_{10} emissions of 1.215 lb/hr from the entire veneer dryer process. Other emission rate changes between the April 21st, 2009 and January 2nd, 2009 submittals : • 90% reduction in modeled PM_{10} emission rates: P1, P8, P11, P7, ST1, TR2, and TR3 • Approximate 50% reduction: ST5 • Approximate 400% increase: ST7, ST8	Ambient impacts from the facility's sources of PM_{10} caused or contributed to a predicted maximum ambient impact nearly equal to the 24-hour NAAQS of 134.9 $\mu g/m^3$, and 41.9 $\mu g/m^3$, annual average, when combined with the DEQ-recommended background concentrations (April 21, 2009 modeling demonstration). Effective control of these sources commensurate with the levels used in the emission calculations and operation of the facility's sources as modeled were important in the demonstration of the facility's compliance with the 24-hour and annual PM_{10} NAAQS. **Steam Veneer Dryer Exhaust Parameters and Emission Rates** Several changes to the exhaust characteristic values were used by CedaPine for the final PM_{10} compliance demonstration: • Exhaust temperature was increased from 100 degrees Fahrenheit (°F) to 210 °F. The increase was not explained or fully substantiated in the April 21, 2009 modeling report, except that exhaust flow rates were stated in this report as being confirmed with CedaPine staff on April 2, 2009. • The release point of veneer dryer exhaust was changed from capped to uninterrupted vertical releases based with flow rates based on fan speed and exit diameters of the two stacks (P15A and P15B). This is the single most critical change in assumptions for reducing ambient impacts. • PM_{10} emissions were split equally between the heating portion and the cooling portion of the veneer dryer.
Backup Boiler B2 **SO_2** SO_2 emissions from the Stand-by Diesel Boiler (Source B2) were modeled using an assumed fuel sulfur content of 500 parts per million (ppm) as listed in emission calculations spreadsheet under the Fuel Burners section. An annual distillate fuel oil usage limit of 60,000 gallons per year was requested. **PM_{10}** An emission rate of 0.11 lb/hr of PM_{10} was modeled for 24 hours per day for the PM_{10} 24 hour NAAQS.	**SO_2** Compliance with the 3-hour and 24-hour SO_2 NAAQS was confirmed. Predicted impacts were below the significant contribution levels. If SO_2 emission rates for this boiler were estimated using the same procedure as PM_{10}, the SO_2 emission rates modeled for 3-hour and 24 –hour SO_2 NAAQS compliance may have used underestimated emissions and impacts. Compliance with either the 3-hour or 24-hour SO_2 NAAQS is not expected to be affected. **PM_{10}** The requested hourly emissions for each averaging period must be modeled for NAAQS compliance demonstrations. Modeling staff defer to the permit writer to determine whether operation of the backup boiler was evaluated at rated capacity, or if instead, it was evaluated at a reduced level of requested daily capacity.
Future Modeling Considerations In the event this facility is required to perform a modeling demonstration for NAAQS or TAPs compliance, the analyses should use an AERMOD-ready Sandpoint met data set that was finalized after this project was initiated. This dataset uses Sandpoint, Idaho surface data and Spokane, Washington airport upper air data.	The use of a 5-year meteorological dataset would allow the use of the highest 6th high value to be used for the design concentration. For this facility's case, if the ambient impacts using the 5-year dataset are similar to, but not greater than, the design concentration using the single year of Moyie Springs met data, some additional margin of compliance could be provided with the compliance demonstration for the 24-hour PM_{10} NAAQS.

2.0 BACKGROUND INFORMATION

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

2.1.1 Area Classification

The Ceda-Pine facility is located in Bonner County, designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}). The Sandpoint PM_{10} Nonattainment Area is operating under a maintenance area plan, which is also located within Bonner County. This facility is not located within the Sandpoint PM_{10} Maintenance Area.

There are no Class I areas within 10 kilometers of the facility.

2.1.2 Significant and Full Impact Analyses

The project is for a Tier II permit renewal. There are no New Source Review (NSR) components to this project. A significant impact analysis was not required. The facility conducted a full ambient impact analysis to support their permit renewal, as requested by DEQ, and required by Idaho Air Rules Section 403.02.

2.1.3 TAPs Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permit requirements for toxic air pollutants from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the emissions increase associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated. If DEQ determines T-RACT is used to control emissions of carcinogenic TAPs, then modeled concentrations of 10 times the AACC are considered acceptable, as per Idaho Air Rules Section 210.12.

This project is for an existing facility. The application does not contain any requested emission increases of TAPs that require analysis under the minor source NSR rules. The project is strictly a renewal of the Tier II OP. Therefore, a TAPs compliance demonstration is not applicable to this permitting project.

2.2 Background Concentrations

Ambient background concentrations for criteria air pollutants were required for this modeling demonstration. Ambient background concentrations were revised for all areas of Idaho by DEQ in March 2003[1]. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources. Background concentrations used in these analyses are listed in Table 2. Background concentrations for NO_2, SO_2, CO, lead, and PM_{10} were based on rural agricultural default values.

Table 2. BACKGROUND CONCENTRATIONS

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a]
PM_{10}[b]	24-hour	73
	Annual	26
NO_2[c]	Annual	17
SO_2[d]	3-hour	34
	24-hour	26
	Annual	8
CO[e]	1-hour	3,600
	8-hour	2,300
Pb[f]	Quarterly	0.03

[a] Micrograms per cubic meter
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[c] Nitrogen dioxide
[d] Sulfur dioxide
[e] Carbon monoxide
[f] Lead

3.0 MODELING IMPACT ASSESSMENT

3.1 Modeling Methodology

Table 3 provides a summary of the modeling parameters used in the submitted modeling analyses.

1 Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling.* Memorandum to Mary Anderson, March 14, 2003.

Table 3. MODELING PARAMETERS		
Parameter	**Description/ Values**	**Documentation/Additional Description**
Model	AERMOD	AERMOD, Version 07026
Meteorological data	Single Year	Met data covering the period of November 30, 2002 to November 29, 2003, from Riley Creek Moyie Springs. This dataset was provided by DEQ to the applicant.
Land Use (urban or rural)	Rural	Urban dispersion coefficients were not used. This area qualifies as rural because greater than 50% of the surrounding area's land use is forested and agricultural land. DEQ used Google Earth to verify this assumption.
Terrain	Considered	3-dimensional receptor coordinates were obtained from USGS DEM files and were used to establish elevation of ground level receptors using the AERMAP program.
Building downwash	Downwash algorithm	Building dimensions obtained from the submitted facility plot plan. BPIP-PRIME and AERMOD, which contains the PRIME algorithm, were used to evaluate downwash effects.
Receptor grid	Grid 1	25 meter spacing around entire ambient air boundary
	Grid 2	50 meter spacing in a 1,250 meter square grid centered on the facility
	Grid 3	100 meter spacing in a 2,100 meter square grid centered on the facility. This grid provides extends approximately 400 meters beyond Grid 2.
	Grid 4	250 meter spacing in a 3,250 meter square grid centered on the facility. This grid extends approximately 500 meters beyond Grid 3.
	Grid 5	500 meter spacing in a 5,500 meter square grid centered on the facility. This grid extends approximately 1,000 meters beyond Grid 4.
	Grid 6	1,000 meter spacing in a 10 kilometer square grid centered on the facility. This grid extends approximately 2,000 meters beyond Grid 5.

3.1.1 Modeling protocol

A modeling protocol was submitted by CJ Environmental, on behalf of Ceda-Pine, prior to submission of the PTC application. The protocol was received on April 24, 2008, and DEQ approved the protocol, with comments, on April 28, 2008. Modeling was conducted using methods documented in the modeling protocol and the *State of Idaho Air Quality Modeling Guideline*.

3.1.2 Model Selection

AERMOD was used by Ceda-Pine to conduct the ambient air analyses. DEQ determined AERMOD is the most-appropriate model for this project, considering regional meteorology, terrain, and the configuration of the proposed industrial facility.

3.1.3 Meteorological Data

Ceda-Pine used one year of met data using a dataset provided by DEQ. The met data was derived from on-site data collected at the Riley Creek Moyie Springs facility. This site is approximately 25 miles north-northeast of the Ceda-Pine facility. Data from November 30, 2002 to November 29, 2003 was used. Spokane, Washington data upper air data was used for processing this met data set.

3.1.4 Terrain Effects

The modeling analyses conducted by Ceda-Pine considered elevated terrain. The permittee's submittal used AERMAP to determine the actual elevation of each receptor and the controlling hill height elevation from United Geological Survey (USGS) digital elevation map (DEM) files for the area surrounding the facility. The domain for the project accounted for terrain that exceeded a 10% slope at all receptors. Elevations of emission sources, buildings, and receptors were developed based on surrounding terrain elevations as extracted from the DEM files.

3.1.5 Facility Layout

DEQ verified proper identification of the facility boundary and buildings on the site by comparing the plot plan submitted with the application to satellite images of the site on the Google Earth internet website. The permittee also provided a partial facility plot plan that depicted the northwest section of the facility. The buildings and emission points were depicted, and the dimensions of each structure were listed on the plot plan.

Ceda-Pine's staff verified building dimensions on April 9, 2009, and minor changes were made to the BPIP file to reflect the new information.

3.1.6 Building Downwash

Plume downwash effects caused by structures at the facility were accounted for in the modeling analyses. The Building Profile Input Program for the Plume Rise Model Enhancements algorithm (BPIP-PRIME) was used by the applicant to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters. The output from BPIP-PRIME was used as input to AERMOD to account for building-induced downwash effects.

3.1.7 Ambient Air Boundary

The application describes several methods that are employed to control public access to the facility and to establish an ambient air boundary. The property boundary was used as the ambient air boundary. Fencing along the north and east sides of the facility, no trespassing signs posted along the roadway (west side of the facility), and gates at the main entrance and exit roads are physical barriers in place to effectively control public access to the facility. On-site observation and control by staff and management, and a continuous presence of security staff, also control public access to the site. DEQ agrees that these measures adequately support the facility's ambient air boundary according to the methods described in the *State of Idaho Air Quality Modeling Guideline*.

3.1.8 Receptor Network

The receptor grid used by Ceda-Pine met the minimum recommendations specified in the *State of Idaho Air Quality Modeling Guideline*. DEQ determined that the receptor grid was adequate to reasonably resolve the maximum modeled ambient impacts.

3.2 Emission Rates

Emissions rates used in the dispersion modeling analyses submitted by the applicant were reviewed against those in the permit application. The following approach was used for DEQ modeling:

- All modeled criteria air pollutant emissions rates were equal to or greater than the facility's emissions calculated in the PTC application or requested permit allowable emission rates.

The short-term emission rates listed in Table 4 were modeled for 24 hours per day, except where noted in Table 5. The annual emissions rates listed in Table 6 were modeled for 8,760 hours per year, except for emission units where an operating hour restriction was applied to the daily operating scenario. These limited hours of operation sources were modeled per the daily operating scenarios for 365 days per year. These emissions were represented in the application to represent the emissions at the facility's requested capacity.

Lead emissions were not modeled for this project. The modeling thresholds listed in the Modeling Guideline are 100 pounds per month (lb/mo) or 1,200 pounds per year (lb/yr). Modeling staff are currently using thresholds of 10 lb/mo 120 lb/yr due to the recently promulgated lead NAAQS that is one tenth the value of the prior NAAQS. A review of this project's statement of basis indicated that lead emissions are approximately 1.6

pounds per quarter (or 0.4 pounds per month or 6.4 pounds per year). Modeling is not required for this quantity of lead emissions. A more detailed investigation into the facility's potential lead emissions was not conducted by DEQ modeling staff.

Sulfur dioxide emissions for the Source B-2 (Standby diesel-fired boiler) were underestimated for the 3-hour and 24-hour averaging periods. The short-term emission rate of SO_2 should be 0.012 lb/hr. The SO_2 emission rate modeled was 0.004 lb/hr. This discrepancy does not warrant re-running the modeling demonstration. Ambient impacts would remain small and SO_2 NAAQS compliance is still assured.

No toxic air pollutants were modeled for this project. There is no modification to the existing facility requested in this project.

Operating hour assumptions were applied to several sources. The operating hours for sources on a daily basis are listed below in Table 5. Table 5 contains the assumptions used in the latest submittal. These operating hour restrictions affect the amount of emissions accounted for on a 24-hour basis and an annual basis. Sources with operating restrictions of ten hours or less were assumed to operate during daytime only when typical operation of the facility is expected to occur. The emission rates modeled to demonstrate compliance with the NAAQS for short-term averaging periods are listed in Table 4. The emission rates used to demonstrate compliance with the NAAQS with an annual averaging period are listed in Table 6.

Table 4. MODELED SHORT TERM CRITERIA POLLUTANT EMISSIONS RATES				
Source ID	Description	Emission Rates (lb/hr[a])		
		PM_{10}[b] 24hr avg	SO_2[c], 3-hr avg, 24-hr avg,	CO, 1-hr avg and 8-hr avg
B1	Hurst hogged fuel-fired boiler	4.88	0.38	9.15
B2	Standby diesel-fired boiler	0.11	0.004	0.17
P15A	Steam veneer dryer vent A	0.607		0.064
P15B	Steam-veneer dryer vent B	0.607		0.064
P1	Deck saw	0.0026		
P8	Chipper #2	0.0004		
P11	Falcon hog	0.013		
P17	Knife hog	0.01		
ST3	Fuel house pile	0.113		
ST2	Sawdust pile	0.10		
ST4	Storage pile	0.01		
P7	Chipper #1	0.007		
TR4	2 chain conveyors	0.33		
ST1	Surge chip bin	0.015		
ST6	Ash bunker	0.007		
ST7	Chip bin	0.148		
ST8	Bunker	0.033		
TR7	Belt conveyor to fuel building	0.26		
TR2	Chain conveyor	0.039		
TR3	2 vibratory belt conveyors	0.039		
ST5	Bin bunker	0.004		
TR10	Loader to and from ST3 (fuel house pile)	0.006		
TR8	Loader to and from ST5 (bin bunker)	0.055		
TR5	Loader to and from ST4 (storage pile)	0.012		
P18V	Globe saw cyclone vented under roof	0.02		
TR9	Loader to and from ST7 (chip bin)	0.006		

[a] Pounds per hour
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers, 24-hour averaging period
[c] Sulfur dioxide
[d] Carbon monoxide

Table 5. OPERATING HOUR LIMITATIONS USED IN MODELING ANALYSES		
Source ID	Source Description	Number of Operating Hours
TR4	2 chain conveyors	20
TR7	Belt conveyor to fuel building	
TR2	Chain conveyor	
TR3	2 vibratory belt conveyors	
ST7	Chip bin	
P1	Deck Saw	
TR5	Loader to and from ST4 (storage pile)	10
P18V	Globe saw venting under roofline	8

Note that the veneer dryer (with emission points P15A and P15B) is no longer assumed to operate only 20 hours per day. The veneer dryer was assumed to operate for 24 hours per day.

Table 6. MODELED ANNUAL CRITERIA POLLUTANT EMISSIONS RATES							
Source ID	Description	Emission Rates (lb/hr[a])					
		PM_{10}[b] Annual avg		SO_2[c], Annual avg		NO_2[d], Annual Avg	
		(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
B1	Hurst hogged fuel-fired boiler	4.88	21.37	0.38	1.67	2.68	11.74
B2	Standby diesel-fired boiler	0.11	0.48	0.004	0.018	0.14	0.61
P15A	Steam veneer dryer Vent A	0.607	2.66				
P15B	Steam veneer dryer Vent B	0.607	2.66				
P1	Deck saw	0.0026	0.0004				
P8	Chipper #2	0.0004	0.0018				
P11	Falcon hog	0.013	0.057				
P17	Knife hog	0.01	0.044				
ST3	Fuel house pile	0.113	0.49				
ST2	Sawdust pile	0.10	0.44				
ST4	Storage pile	0.01	0.044				
P7	Chipper #1	0.007	0.031				
TR4	2 chain conveyors	0.33	0.050				
ST1	Surge chip bin	0.015	0.066				
ST6	Ash bunker	0.007	0.031				
ST7	Chip bin	0.148	0.023				
ST8	Bunker	0.033	0.14				
TR7	Belt conveyor to fuel building	0.26	0.040				
TR2	Chain conveyor	0.039	0.006				
TR3	2 vibratory belt conveyors	0.039	0.006				
ST5	Bin bunker	0.004	0.018				
TR10	Loader to and from ST3 (fuel house pile)	0.006	0.026				
TR8	Loader to and from ST5 (bin bunker)	0.055	0.24				
TR5	Loader to and from ST4 (storage pile)	0.012	0.0009				
P18V	Globe saw cyclone vented under roof	0.02	0.0012				
TR9	Loader to and from ST7 (chip bin)	0.006	0.026				

[a] Pounds per hour
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers, 24-hour averaging period
[c] Sulfur dioxide
[d] Nitrogen dioxide

3.3 Emission Release Parameters

Table 7 provides emissions release parameters, including stack height, stack diameter, exhaust temperature, and exhaust velocity for point sources. The application contains descriptions of the assumptions used to estimate parameters for area and volume sources. Area source modeling parameters are listed in Table 8. Volume source modeling parameters are listed in Table 9. Hogged fuel boiler parameters were obtained from source test results. Many of the release parameters were stated in the application as being obtained from first-hand on-site verification by the facility's staff. The exhaust parameters for the veneer dryer were altered in the April 21, 2009 submittal to reflect an unobstructed vertical release. The single stack was increased to two stacks (P15A and P15B) to account for the stack for the hot dryer section and the cooler section. The veneer dryer stack's parameters were stated in the April 21 submittal as being "manufacturer's specifications" data. The diameter of stack P15 (now P15A) was increased from 0.69 meters to 0.76 meters. The increase in the exit temperatures for the veneer dryer stacks was not specifically discussed in the April 21, 2009 revised modeling report. This modeling report contained the following statement on Page 1:

> **"All model data, including all stack, area, and volume source data and building heights have been reverified and updated as necessary from previous permit documentation based upon signed and stamped engineering plans by facility staff and environmental support staff."**

The changes exhaust parameters for the veneer dryer stacks improves the dispersion of emissions considerably. The release parameters were accepted by DEQ as submitted.

Table 7. POINT SOURCE STACK PARAMETERS

Release Point	Description	Stack Height (m)[a]	Modeled Stack Diameter (m)	Stack Gas Flow Temperature (K)[b]	Stack Gas Flow Velocity (m/sec)[c]
B1	Hurst hogged fuel-fired boiler	12.19	0.737	416.5	22.39
B2	Standby diesel-fired boiler	8.53	0.457	485.9	0.001[d]
P15A	Steam veneer dryer (dried veneer side)	8.72	0.762	372.0	16.99
P15B	Steam veneer dryer (green veneer end)	9.60	0.610	372.0	11.46

[a] Meters
[b] Kelvin
[c] Meters per second
[d] Stack exhaust impeded by a raincap

Table 8. AREA SOURCE RELEASE PARAMETERS

Release Point	Description	Release Height (m[a])	Easterly Length (m)	Northerly Length (m)	Angle From North (degrees)	Vertical Dimension (m)
P1	Deck saw	4.57	1.52	2.44		1.07
P2	Nicholson ring debarker	4.57	2.13	2.44		1.52
P3	Chop saw #1	4.57	2.13	2.44		3.66
P4	Rosser head debarker	4.57	1.83	2.13		1.22
P5	Chop saw #2	4.57	2.13	2.44		1.07
P8	Chipper #2	2.44	1.83	2.44		1.07
P9	Screen out	2.44	1.83	2.74		0.91
P11	Falcon hog	2.44	1.52	2.74		1.37
P17	Knife hog	3.66	1.83	2.74		1.37
ST3	Fuel house pile	3.05	42.67	36.58	17	3.05
ST2	Sawdust pile	2.44	39.62	35.05		2.44
ST4	Storage pile	3.05	22.86	6.10	17	3.05

[a] Meters

Table 9. VOLUME SOURCE RELEASE PARAMETERS

Release Point	Description	Release Height (m^a)	Initial Horizontal Dispersion Coefficient σ_{y0} (m)	Initial Vertical Dispersion Coefficient σ_{z0} (m)
P7	Chipper #1	0.91	0.50	4.39
TR4	2 chain conveyors	7.92	0.19	2.27
ST1	Surge chip bin	8.23	0.18	0.14
ST6	Ash bunker	1.22	0.43	5.81
ST7	Chip bin	2.74	0.85	2.98
ST8	Bunker	2.13	0.85	2.98
TR7	Belt conveyor to fuel building	2.74	0.12	2.97
TR2	Chain conveyor	4.57	1.35	0.21
TR3	2 vibratory belt conveyors	1.52	0.14	0.21
ST5	Bin bunker	0.61	0.05	0.28
TR10	Loader to and from ST3 (fuel house pile)	1.22	0.68	0.57
TR8	Loader to and from ST5 (bin bunker)	1.22	0.68	0.57
TR5	Loader to and from ST4 (storage pile)	1.22	0.68	0.57
P18V	Globe saw cyclone vented under roof	1.22	2.13	2.98
TR9	Loader to and from ST7 (chip bin)	1.22	2.13	2.98

[a] Meters

3.4 Results for Ambient Impact Analyses

3.4.1 Full Impact Analyses

The compliance demonstration used the maximum (highest 1st high modeled concentrations) as design concentrations. A single year of meteorological data was used for the analyses, and this data was collected at a site near Moyie Springs, Idaho. The straight-line distance of Moyie Springs to the Ceda-Pine Veneer facility is approximately 25 miles. The use of the maximum values for design concentrations results in a conservative impact analysis.

The design impact scenario included all sources operating.

The results of the submitted modeling demonstration are listed in Table 10.

Table 10. RESULTS OF FULL IMPACT ANALYSES						
Pollutant	**Averaging Period**	**Modeled Design Concentration ($\mu g/m^3$)[b]**	**Background Concentration ($\mu g/m^3$)**	**Total Ambient Impact ($\mu g/m^3$)**	**NAAQS[c] ($\mu g/m^3$)**	**Percent of NAAQS**
CO[a]	1-hour	243.4[g]	NA	NA	40,000	NA
	8-hour	70.8[g]	NA	NA	10,000	NA
PM_{10}[d]	24-hour	61.9	73	134.9	150	90%
	Annual	15.9	26	41.9	50	84%
SO_2[e]	3-hour	5.0[g]	NA	NA	1,300	NA
	24-hour	1.3[g]	NA	NA	365	NA
	Annual	0.2[g]	NA	NA	80	NA
NO_2[f]	Annual	3.1[h]	17	20.1	100	20%

[a] Carbon monoxide
[b] Micrograms per cubic meter
[c] National ambient air quality standards
[d] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
[e] Sulfur dioxide
[f] Nitrogen dioxide
[g] Impacts are below the significant contribution levels listed in Idaho Air Rules Section 006.102. NAAQS compliance is assured without the addition of any ambient background concentration due to these low impacts.
[h] Impact value taken from 10/31/08 submittal

3.5 Sensitivity Analyses

3.5.1 Deck Saw and Steam Veneer Dryer Emission Rate Alterations

DEQ performed a sensitivity analysis in mid-March 2009 to evaluate the effects of reducing the PM_{10} emission rate for the deck saw (an area source). This analysis included an increase in PM_{10} emissions for the veneer dryer based on an US EPA AP-42 emission factor. The same Moyie Springs 2002-2003 met data file was used for the analyses and all sources were assumed to be operating.

Source P1 (deck saw) caused the highest predicted impact of any individual source in CedaPine's December 3, 2008 and January 3, 2009 modeling submittals. This source was limited to 20 hours of operation, for a total emission rate of 12.9 lb PM_{10} per day at 0.646 lb/hr, according to CedaPine's submitted analyses.

DEQ permitting staff noted an issue with the PM_{10} emission rate of 0.078 lb/hr for the veneer dryer. The emission factor could not be substantiated upon consultation with CedaPine and their consultant. DEQ permitting staff asked modeling staff to perform a sensitivity analysis using a PM_{10} emission rate based on published documentation in AP-42 Section 10.5, dated January 2002, for indirect-fired steam veneer dryers processing softwoods. The sensitivity analysis veneer dryer emission rate was 0.90 lb PM_{10}/hr.

Table 11. ASSUMPTIONS IN DECK SAW/VENEER DRYER EMISSION RATE SENSITIVITY ANALYSES

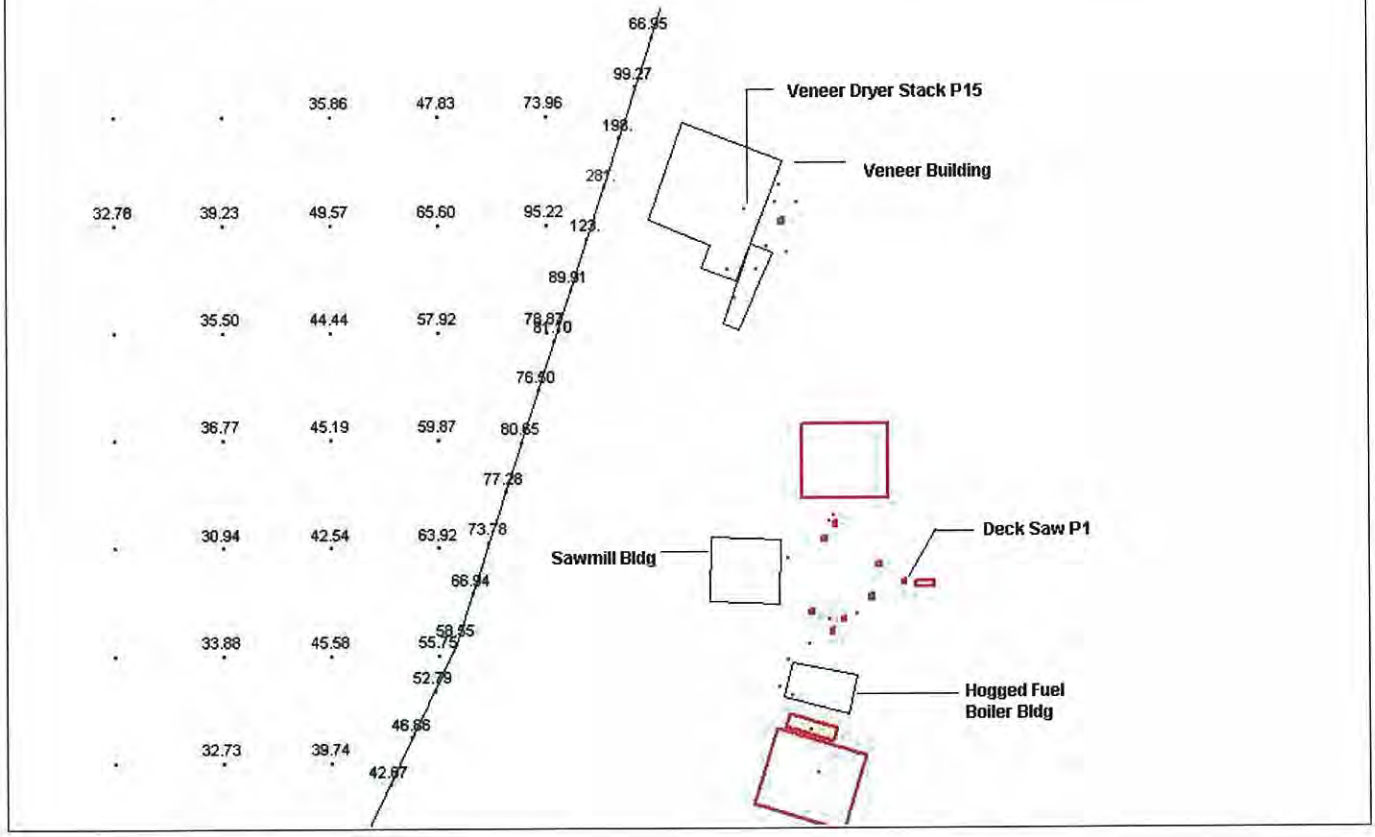
Source ID	**Description**	**CedaPine Submittal Modeled PM_{10} Emission Rate (lb/hr)**	**DEQ Modeled PM_{10} Emission Rate (lb/hr)**	**Exhaust Parameters**	**Hours of Operation for Source**
P1	Deck Saw	0.646	0.0646	Per CedaPine submittal	20
P15	Steam-fired Veneer Dryer	0.078	0.90	Unchanged—same as CedaPine submittal	20

A maximum ambient impact of 281 $\mu g/m^3$, 24-hour average was predicted by AERMOD assuming all sources operating during that day. The maximum impact occurred at an ambient air boundary receptor nearly due west of the veneer dryer stack. This receptor is the closest receptor to the veneer dryer stack (P15). High ambient impacts were suspected to be caused by building downwash effects on the raincap-equipped veneer dryer stack and the close proximity of the ambient air boundary to the veneer building and veneer dryer stack.

Impacts from the deck saw (source P1) were predicted to be reduced to 2.81 $\mu g/m^3$, 24-hour average. Impacts from the deck saw were reduced drastically with the reduced modeled emission rate. The deck saw was no longer a primary contributor to the design concentration value or the design concentration's location. The deck saw's maximum ambient impacts were predicted to occur at the property boundary ambient receptor directly west of the sawmill building.

The result of this sensitivity analysis showed that reducing PM_{10} emissions at the deck saw would assist the facility in demonstrating compliance with the PM_{10} NAAQS. By modeling the veneer dryer with an emission rate of 0.90 lb PM_{10}/hr the location of the design concentration moved away from the ambient air boundary directly west of the sawmill building and the collection of area and volume sources associated with the production process, to an ambient air receptor at the facility's property boundary immediately west of the veneer building. The veneer dryer became the primary contributor to ambient impacts when modeled at the higher PM_{10} emission rate. Source grouping of the veneer dryer stack indicated that the veneer dryer impact at the same maximum ambient impact receptor was approximately 240 $\mu g/m^3$, 24-hour average. See Figure 1 below to note the locations and magnitudes of the impacts predicted by the sensitivity analysis.

Figure 1-Impacts Based on Altered Veneer Dryer and Deck Saw PM_{10} Emission Rates



3.5.2 Veneer Dryer Exhaust Temperature Sensitivity Analysis

Several changes to the methods used to model the veneer dryer emissions unit were made by CedaPine in the April 21, 2009 revision. In addition to modeling the source with two separate stacks with vertical uninterrupted releases at a higher PM_{10} emission rate, modeling staff noted that the exhaust temperature for these sources increased from 100 °F to 210 °F for both stacks (P15A and P15B). An explanation of the increased temperature was not found in the April 21, 2009 submittal's documentation. DEQ modeling staff performed a modeling run with the April 21, 2009 modeling input files, with a change in exhaust temperature to 100 °F to verify that the exhaust temperature is not a critical parameter for demonstrating NAAQS compliance.

The maximum predicted 24-hour PM_{10} ambient impact occurred at the same receptor along the ambient boundary as CedaPine's April 21, 2009 modeling demonstration. The receptor UTM coordinates are (537,477, 5,363,717) meters. The maximum predicted PM_{10} impact for all sources (including both boilers) was 70.9 $\mu g/m^3$, 24-hour average. The source grouping for operation of all sources excluding the hogged fuel boiler (B1) provided a predicted maximum impact of 70.6 $\mu g/m^3$, 24-hour average.

The design concentrations for comparison against the PM_{10} 24-hour NAAQS, when combined with the DEQ-provided background concentration of 73 $\mu g/m^3$, 24-hour average, were 143.9 $\mu g/m^3$, 24-hour average, for the all sources operating scenario, and 143.6 $\mu g/m^3$, 24-hour average, for the backup boiler (PM_{10} emission rate of 0.109 lb/hr) operating with the rest of the facility's sources and the hogged fuel boiler standing idle. These impacts are approximately 96% of the 24-hour PM_{10} NAAQS. Although ambient impacts were higher with the 100 °F scenario than the 210 °F scenario, compliance at the lower exhaust temperature was still be demonstrated. Additional substantiation of the exit temperature for the stack on each zone of the veneer dryer is only necessary for evaluating the modeling demonstration compliance status if CedaPine requests an increase in PM_{10} emission rates for one or more emission sources above their April 21, 2009 modeled rates.

4.0 CONCLUSIONS

The ambient air impact analysis submitted, in combination with DEQ's verification analyses, demonstrated to DEQ's satisfaction that emissions from the facility, as represented by the applicant in the permit application, will not cause or significantly contribute to a violation of any air quality standard.

Appendix D – Facility Comments

DEQ's response to facility's comments received on August 21, 2009 and September 8, 2009.

1) Elmer Mattila's title: Director of Personnel.

   The information has been added to the coversheet of the permit.

2) PC 3.6 Diesel oil fired boiler: The modeled fuel rate is correct.

   Okay.

3) "Scribner Log Rule" - We use "Coconino Scrib(n)er decimal C log rule".

   The changes have been made to PCs 4.4.1, 4.4.2, and 4.7.

4) 1.3 Regulated Sources-

   Standby distillate (No.2 only) oil-fired boiler

   The changes have been made to Tables 1.1 and 5.1 and PCs 3.1 and 3.4.1.

5) P3 is chop saw # 1
   P5 is chop saw # 2
   P18 is Globe saw and cyclone

   The changes have been made to Table 1.1 of the permit.

6) 3.1 Fuel is mechanically fed into the firebox, (not gravity fed).

   The change has been made to PC 3.1.

7) 2.13 We are not in the business of selling, or distributing any distillate products. In the rural Samuels area, Coleman Oil is the only licensed industrial supplier of diesel fuel. We burn only Grade 2 in the diesel boiler (B-2). Our fuel supplier has already provided a letter stating that the sulfur content will not exceed these limits. We request: Section 2.13 - be removed, and Section 2.14 - the words "for every shipment", and reference to 2.13 be removed.

   3.4.1 If we did burn No.1, the limit would be 300 ppm (.03% by weight) or less. (Section 4.4.1 contradicts section 2.13. So again, deleting 2.13 would solve this issue.)

   PC 2.13 is a facility-wide permit condition taken from IDAPA 58.01.01.725. The permittee is subject to this requirement for distillate fuel oil used at the facility despite whether the requirement is included in the permit or not.

   However, the distillate fuel oil used in the standby boiler is subject to more stringent limit than what is in PC 2.13 because the modeled SO_2 emissions of the standby boiler is calculated using sulfur content of 500 ppm (0.05% by weight) or less rather than 0.5% by weight or 5,000 ppm.

   That Coleman Oil is the only licensed industrial supplier of diesel fuel for the area at this time does not necessary guarantee that Coleman Oil will be the only supplier in the future, or the sulfur content will always be less than 500 ppm for each shipment in the future.

   "• ASTM Grade 1 fuel oil - 0.3% by weight." has been removed from PC 2.13

8) 3.10 Distillate (B-2) fuel meter. The diesel boiler is only a back-up for the hog fuel boiler. As shown in our application, we anticipate the B2 boiler will only operate 13 (sporadic) weeks/year. Fuel is piped into the boiler, and what isn't consumed is piped back into the tank. Two meters would be required. To install these meters would be cost prohibitive. We believe we can approximate fuel consumption accurately for such a short time period without installing meters.

Please refer to the explanation in Section 4.10.19 of this document.

This comment does not provide detailed monitoring alterative for DEQ to consider.

However, considering the current economic situation, PC 3.10 is revised to provide the permittee one year or less timeframe to install the monitoring device.

9) 3.12 and (2.8) - Visible emission requirements are confusing and onerous for the boilers as stated. Quarterly site-wide (initial see/no see) opacity inspections are listed in section 2.8. However, Section 3.12 requires monthly Method 9 opacity monitoring for B-1 Hog fuel boiler. We request that B-1 follow the process identified in Section 2.8.

Please refer to Sections 4.10.4 and 4.10.21of this document for explanations.

10) 4.3 Emission Limits don't seem to match our most recent spreadsheet. For example, we asked for 3.04 tons per year of PM, not PM_{10} (4.3.1). However, the PM_{10} emissions from transfer points alone equals 2.81 tons/year (4.3.2). If one adds the process, transfer, and storage emissions together; the cumulative total should equal 11.41 tons/year.

PM_{10} (T/yr) from process (exclude steam veneer dryer) = 4.27 T/yr (taken from spreadsheet titled "CPV2008TIER2renewal041709" worksheet titled "processes" cell J48) – (6075 lb/yr, taken from spreadsheet titled "CPV2008TIER2renewal041709" worksheet titled "processes" cell J43) / 2000 lb/T) = 1.23 T/yr.

PM_{10} (T/yr) from transfer = SUM('Storage and Transfers'!I6:I10)+SUM('Storage and Transfers'!J25:J28) (from spreadsheet titled "CPV2008TIER2renewal041709" worksheet titled "Storage and Transfers") = 0.6 T/yr

PM_{10} (T/yr) from storage = SUM('Storage and Transfers'!K48:K52)+SUM('Storage and Transfers'!K58:K60) (from spreadsheet titled "CPV2008TIER2renewal041709" worksheet titled "Storage and Transfers") = 2.13 T/yr

Total PM_{10} from process, transfer, and storage (piles and bins) = 1.23 + 0.6 + 2.13 = 3.96 T/yr.

2.81 T/yr in PC 4.3.2 has been changed to 3.96 T/yr.

While reviewing the calculation, I discovered that 39.1 lb/day should be 27.4 lb/day. The corrections have been made to PC 4.3.2 and Table 5.1.

11) Thank you for (correcting/modifying) the emission limits. However, we are still concerned about the math. The steam veneer dryer is the largest PM_{10} emitting process point at our facility. Why is it being subtracted from allowable PM_{10} emissions?

We believe the numbers should be as follows (using the same file "CPV2008TIER2renewal041709":

Processes tab cell J 48 (= 4.27 T/yr) as process point PM_{10} emissions

Storage/transfer tab cells I14 + J29 = 0.46+ 0.13 (= 0.59) T/yr transfer PM_{10} emissions

Storage/transfer tab cells K48:K52 (=2.13) T/yr storage PM_{10} emissions (was OK)

For a total process/storage/transfer PM_{10} emissions = 4.27+0.59+2.13 = 6.89 T/yr

Total PM_{10} emissions limit of 3.96 T/yr from process, transfer, and storage does not include emissions from the veneer dryer because the veneer dryer has its own limit of 3.04 T/yr under PC 4.3.1.

Therefore, total PM_{10} emissions limit from process, transfer, and storage when excluding the veneer dryer emissions is 3.96T/yr rather then 6.89 T/yr.

4.27 T/yr – 3.04 T/yr + 0.6 T/yr + 2.13 T/yr = 3.96 T/yr

12) - 4.7 Facility log throughput - "Every daily" is probably meant to read "every day".

"Every daily" has been changed to "Every day."

13) - 4.7 and 4.8 Daily requirements - Our production has dropped off significantly since this permit renewal process began several years ago. We do not anticipate approaching these limits during the 5 year life of this permit. While we can "monitor" the production levels daily, it would be far more practical to for us to add and record the "highest daily production" during each given month, on our current Tier II monitoring report.

The comment did not provide details on how "highest daily production" would be determined. DEQ does not have enough information to determine that the proposed monitoring alternative would ensure compliance with 24-hr PM_{10} NAAQS. PCs 4.7 and 4.8 have not been changed.

14) - Table 5.1 We see that PM_{10} limits are actually our requested PM emissions. This is OK. But the error of 4.3.2 has been carried into this table as well.

2.81 T/yr in Table 5.1 has been changed to 3.96 T/yr. The limits are taken from or based on spreadsheet titled "CPV2008TIER2renewal041709."

While reviewing the calculation, I discovered that 39.1 lb/day should be 27.4 lb/day. The correction has been made to Table 5.1.