



**Air Quality Permitting
Statement of Basis**

August 15, 2007

Permit to Construct No. P-2007.0060

Treasure Valley Forest Products, Boise

Facility ID No. 001-00208

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Final

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Acronyms, Units, and Chemical Nomenclatures

AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal unit
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
MMBtu	million British thermal units
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
O ₃	ozone
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
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/yr	tons per year
µg/m ³	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct.

2. FACILITY DESCRIPTION

The Yamhill facility receives green logs of primarily ponderosa pine for processing. The green logs are debarked, cut to the desired length, and roughly sized to the desired diameter. The logs are then moved by heavy equipment to either a C-Frame Sawmill to produce lumber or a green lathe building to lathe the logs to 1 inch over finished size. Lumber and lathed logs are moved by heaving equipment to the drying kilns. The drying kiln consists of a 2000 square foot building heated to 120 degree Fahrenheit with hot water radiators. The hot water is heated in a wood-fired boiler.

The lumber and lathed logs remain in the drying kiln for 8 to 10 weeks to reduce moisture content from approximately 35% to less than 15%. After the logs are dry, they are finished to the desired diameter, length, and smoothness in one or more of several processors at the site.

3. FACILITY / AREA CLASSIFICATION

Treasure Valley Forest Products is classified as a minor facility because, Treasure Valley Forest Product's potential to emit is less than major source thresholds without requiring limits on its potential to emit. The AIRS classification is "B".

The facility is located within AQCR 64 and UTM zone 11. The facility is located in Ada County which is designated as unclassifiable for ozone, attainment for CO and PM₁₀ and non-attainment for all other criteria pollutants (NO_x, SO₂, and lead) in accordance with 40 CFR 81.313.

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at Treasure Valley Forest Products. This required information is entered into the EPA AIRs database.

4. APPLICATION SCOPE

This is an initial PTC for construction of a C-Frame sawmill at the Treasure Valley Forest Products facility at 1625 Yamhill Road, Boise, Idaho 83716. This is an existing facility that is previously unpermitted.

4.1 *Application Chronology*

April 18, 2007	Received PTC application.
April 19, 2007	Received PTC application fee
May 3, 2007	Application determined complete
August 15, 2007	Final PTC Issued

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action:

5.1 Equipment Listing

Table 5.1 SUMMARY OF REGULATED SOURCES

Source Description	Emissions Control(s)
<p>Wood-fired Boiler and Drying Kiln</p> <p><u>Wood-fired Boiler</u> Manufacturer: Central Boiler Model No.: CL 5648SB Max BTU: 500,000</p> <p><u>Drying Kiln</u> Max Capacity: 1 million board feet/yr Actual Operation: 8760 hr/yr Max Operation: 8760 hr/yr</p>	None
<p>Sawmilling and Processing</p> <p><u>Debarker/Sorter</u></p> <ul style="list-style-type: none"> - Max Capacity: 13 million board feet/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Debarker/Sorter Screen</u></p> <ul style="list-style-type: none"> - Max Capacity: 13 million board feet/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Green Lathe Cyclone</u></p> <ul style="list-style-type: none"> - Max Capacity: 10,264 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Green Lathe Cyclone Bin</u></p> <ul style="list-style-type: none"> - Max Capacity: 10,264 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Processor A Cyclone</u></p> <ul style="list-style-type: none"> - Max Capacity: 1,026 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Processor A Cyclone Bin</u></p> <ul style="list-style-type: none"> - Max Capacity: 1,026 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Processor B Cyclone</u></p> <ul style="list-style-type: none"> - Max Capacity: 153 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr <p><u>Processor B Cyclone Bin</u></p> <ul style="list-style-type: none"> - Max Capacity: 153 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr 	None

Table 5.2 SUMMARY OF REGULATED SOURCES

Source Description	Emissions Control(s)
<u>Pole Lathe Cyclone</u> - Max Capacity: 998 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr	None
<u>Pole Lathe Cyclone Bin</u> - Max Capacity: 998 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr	
<u>Sawmill</u> - Max Capacity: 12 million board feet/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr	
<u>Sawmill dust bin</u> - Max Capacity: 1,796 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr	
<u>Sawmill chip bin 1</u> - Max Capacity: 3,849 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr	
<u>Sawmill chip bin 2</u> - Max Capacity: 3,849 tons dry wood/yr - Actual Operation: 2080 hr/yr - Max Operation: 8760 hr/yr	

5.2 Emissions Inventory

The applicant estimated emissions from Treasure Valley Forest products using AP-42, Section 10.9, Table 10.9-7 – Engineered Wood Products Manufacturing and NCASI, NCASI Environmental Resource Handbook for Wood Products Plants 2-3, Chapter 2: Woodyard and Wood Furnish Preparation 2004, National Council for Air and Stream Improvement, last revised October 31, 2004. The applicant also considered the 1997 DEQ Wood Products Emission Factor Guidance but felt the guidance was too conservative to for supporting a particulate matter emission factor for debarking and log cutting for this facility. Tables 5.2 and 5.3 summarize the facility wide criteria and hazardous emission estimates.

Table 5.2 CRITERIA POLLUTANT EMISSIONS ESTIMATES

Emission Source	PM		PM ₁₀		NO _x		SO ₂		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Wood-fired boiler	0.1	0.3	0.1	0.3	0.25	0.8	1.25E ⁻⁰²	3.90E ⁻⁰²	0.3	0.9	8.5E ⁻⁰³	2.65E ⁻⁰²
dryer kiln	2.0E ⁻⁰²	5.0E ⁻⁰³	1.08E ⁻⁰²	2.6E ⁻⁰³							6.88	1.65
sawmill	1.58	1.64	0.9	0.94								
debarker	1.86	1.94	1.05	1.09								
debarker screen	0.15	0.16	0.07	0.07								
green lathe	2.47	2.57	1.23	1.28								
processor A	0.25	0.26	0.12	0.13								
Processor B	0.04	0.04	0.02	0.02								
Pole lathe	0.24	0.25	0.12	0.12								
green lathe cyclone	5.0E ⁻⁰³	5.0E ⁻⁰²	2.0E ⁻⁰³	2.0E ⁻⁰³								
Processor A Cyclone	5.0E ⁻⁰⁴	5.0E ⁻⁰⁴	2.0E ⁻⁰⁴	2.0E ⁻⁰⁴								
Processor B Cyclone	7.0E ⁻⁰⁵	7.0E ⁻⁰⁵	3.0E ⁻⁰⁵	3.0E ⁻⁰⁵								
Pole Lathe Cyclone	5.0E ⁻⁰⁴	5.0E ⁻⁰⁴	2.0E ⁻⁰⁴	2.0E ⁻⁰⁴								
Sawmill Sawdust	8.0E ⁻⁰⁴	9.0E ⁻⁰⁴	4.0E ⁻⁰⁴	4.0E ⁻⁰⁴								
Sawmill Wood Chip 1	2.0E ⁻⁰³	2.0E ⁻⁰³	1.0E ⁻⁰³	1.0E ⁻⁰³								
Sawmill Wood Chip 2	2.0E ⁻⁰³	2.0E ⁻⁰³	1.0E ⁻⁰³	1.0E ⁻⁰³								
Sawdust pile	0.83	0.87	0.3	0.31								
Total		8.09		4.27		0.8		3.9E⁻⁰²		0.9		2.65E⁻⁰²

Table 5.3 HAZARDOUS POLLUTANT EMISSIONS ESTIMATES

Emission Source	HAP	
	lb/hr	T/yr
Wood-fired boiler	1.08E ⁻⁰²	3.7E ⁻⁰³
dryer kiln	0.14	0.03
Total		3.7E⁻⁰³

5.3 Modeling

Modeling results demonstrated that the facility emits 4.27T/yr of PM₁₀ which causes a predicted ambient concentration of 143µg/m³ which is 95% of the NAAQS for the 24-hour standard (150µg/m³). A detailed analysis of the modeling is contained in Appendix C.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201.....Permit to Construct Required

The facility's proposed project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

IDAPA 58.01.01.203.....Permit Requirements for New and Modified Stationary Sources

The applicant has shown to the satisfaction of DEQ that the facility will comply with all applicable emissions standards, ambient air quality standards, and toxic increments.

5.5 Permit Conditions Review

This section describes only those permit conditions that have been revised, modified or deleted as a result of this permit action.

WOOD-FIRED BOILER AND DRYING KILN

Permit Condition 2.3

Permit Condition 2.3 establishes a PM₁₀ and HAP emission limit for the Drying Kiln and the Wood-fired boiler in order to ensure operation below NAAQS for PM₁₀ 24-hour standard. Compliance shall be demonstrated through Permit Conditions 2.6 and 2.7. Because the wood-fired boiler supplies heat exclusively to the drying kiln, by limiting the throughput to the kiln the combustion rate of wood in the boiler is inherently limited.

Permit Condition 2.4

Permit Condition 2.4 establishes a limit on visible emissions from the wood-fired boiler stack and fugitive venting from the kiln. Compliance shall be demonstrated through Permit Condition 2.8, 2.9, and General Provision 7.

Permit Condition 2.5

Permit Condition 2.5 establishes a particulate matter emission limit for the wood-fired boiler that meets the definition of "fuel-burning equipment" of IDAPA 58.01.01.006.45. IDAPA 58.01.01.677 applies to the boiler because the facility is a minor source and the boiler has a maximum rated input of less than ten million BTU per hour and is fueled with wood as specified in Permit Condition 2.2.

SAWMILLING AND PROCESSING

Permit Condition 3.3

Permit Condition 3.3 establishes a PM₁₀ emission limit for the Sawmilling and Processing order to ensure operation below NAAQS for PM₁₀ 24-hour standard. Compliance shall be demonstrated through Permit Conditions 3.6 and 3.7.

Permit Condition 3.4 and 3.5

Permit Condition 3.4 and 3.5 establishes a visible emission limit from the sawmilling and processing stacks, and fugitive venting. Compliance shall be demonstrated through permit conditions 3.8, 3.9, and General Provision 7.

6. PERMIT FEES

The applicant satisfied the PTC application fee requirement of IDAPA 58.01.01.224 by submitting a fee of \$1,000.00 at the time the original application was submitted, April 19, 2007. The total emissions from the new facility is greater than 1 T/yr by less than 10 T/yr; therefore, the associated processing fee is \$2,500.00. The applicant satisfied the PTC Processing fee requirement of IDAPA 58.01.01.225 by submitting a fee of \$2,500.00 received on August 6, 2007.

Table 6.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	0.8	0	0.8
SO ₂	0.039	0	0.039
CO	0.94	0	0.94
PM ₁₀	4.27	0	4.27
VOC	0.00265	0	0.00265
TAPS/HAPS	0.00037	0	0.00037
Total:	6.05	0	6.05
Fee Due	\$2,500.00		

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

A draft permit was sent to Boise Regional Office on June 7, 2007 for review. No comments were received.

7.2 Facility Review of Draft Permit

A draft permit was sent to the facility for review on July 13, 2007. Comments included removal of fugitive emissions limits from Table 3.2 because permit condition 3.5 requires reasonable control of fugitives. This comment has been incorporated.

The facility requested some typographical clarifications regarding source titles and permit condition clarity as applied to those sources. These comments have been incorporated to assure operator understanding.

7.3 Public Comment

An opportunity for public comment period on the PTC application was provided from May 17, 2007 through May 31, 2007 in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and no requests for a public comment period on DEQ's proposed action.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommends that Treasure Valley Forest Products be issued a final PTC No. 2007.0060 for the construction of C-Frame Sawmill. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

JP/fw Permit No. P-2007.0060

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Appendix A
AIRS Information
P-2007.0060

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Facility Name: Treasure Valley Forest Products
Facility Location: Boise
AIRS Number: 001-00208

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION
								A-Attainment U-Unclassified N- Nonattainment
SO ₂	B							U
NO _x	B							U
CO	B							U
PM ₁₀	B							U
PT (Particulate)								
VOC	B							U
THAP (Total HAPs)	B							
APPLICABLE SUBPART								

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A** = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM** = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B** = Actual and potential emissions below all applicable major source thresholds.
- C** = Class is unknown.
- ND** = Major source thresholds are not defined (e.g., radionuclides).

Appendix B
Emissions Inventory
P-2007.0060

Treasure Valley Forest Products - Lodge Logs
Facility Summary Sheet

Source	Process	0.3	0.3	0.76	0.039	0.94	0.0285	0.0337	0.1	0.1	0.245	0.0125	0.300	0.0085	0.0108
BOILER	Wood-Fired Boiler	0.3	0.3	0.76	0.039	0.94	0.0285	0.0337	0.1	0.1	0.245	0.0125	0.300	0.0085	0.0108
SAW	Sawmill	1.64	0.94						1.59	0.50					
KLN	Dry Kiln	0.005	0.0026						0.02	0.0108				6.88	0.14
DEB	Debarker	1.94	1.09				1.65	0.03	1.86	1.05					
DESS	Debarker Screen	0.16	0.07						0.15	0.07					
	Cyclones														
GCYCL	Green Lathe	2.57	1.28						2.47	1.23					
ACYCL	Processor A	0.26	0.13						0.25	0.12					
BCYCL	Processor B	0.04	0.02						0.04	0.02					
PCYCL	Pole Lathe	0.25	0.12						0.24	0.12					
	Bins														
GRIM	Green Lathe Cyclone	0.005	0.002						0.005	0.002					
ABIN	Processor A Cyclone	0.0005	0.0002						0.0005	0.0002					
BBIN	Processor B Cyclone	0.00007	0.00003						0.00007	0.00003					
BBIN	Pole Lathe Cyclone	0.0005	0.0002						0.0005	0.0002					
SBIN	Sawmill Sawdust	0.0069	0.0004						0.0069	0.0004					
WBIN	Sawmill Wood Chip 1	0.002	0.001						0.002	0.001					
WBINT	Sawmill Wood Chip 2	0.002	0.001						0.002	0.001					
PILE	Sawdust Pile	0.87	0.31						0.83	0.30					
	Facility Total	8.0	4.3	4.0	0.8	0.9	1.7		7.5	3.9	0.2	0.0	0.3	6.9	
	Significant Emission Rates (10%)	2.5	1.5	4.0	4.0	10.0	4.0								
	Modeling Threshold	na	1.0	1.0	1.0	na	na		na	0.2	na	0.2	14.0	na	
	Modeling Required		Yes	No	No	na	na		Yes	No	na	No	No	na	

Treasure Valley Forest Products - Lodge Logs
Toxic Summary Sheet

Pollutant	Total TAPS (lb/hr)	IDAPA 58.01 01.585/ 586 - EL (lb/hr)	PTE Emission Rate vs. EL
Benzo(a)anthracene	3.25E-08	NA	Below
Benzo(a)pyrene	1.30E-06	2.00E-06	Below
Benzo(b)fluoranthene	5.00E-08	NA	Below
Benzo(j,k)fluoranthene	8.00E-08	NA	Below
Benzo(k)fluoranthene	1.80E-08	NA	Below
Chrysene	1.90E-08	NA	Below
Dibenzo(a,h)anthracene	4.55E-09	NA	Below
Indeno(1,2,3,c,d)pyrene	4.35E-08	NA	Below
Phenanthrene	3.50E-06	NA	Below
Pyrene	1.85E-06	NA	Below
Acenaphthene	4.55E-07	NA	Below
Acenaphthylene	2.50E-06	NA	Below
Anthracene	1.50E-06	NA	Below
Benzo(e)pyrene	1.30E-09	NA	Below
Benzo(g,h,i)perylene	4.65E-08	NA	Below
Fluoranthene	8.00E-07	NA	Below
Fluorene	1.70E-06	NA	Below
Naphthalene	4.85E-05	3.33E+00	Below
2-Methylnaphthalene	8.00E-08	NA	Below
Acetaldehyde	4.15E-04	3.00E-03	Below
Acetophenone	1.60E-09	NA	Below
Acrolein	2.00E-03	1.70E-02	Below
Benzene	2.10E-03	8.00E-04	Exceeds
bis(2-Ethylhexyl)phthalate	2.35E-08	2.80E-02	Below
Bromomethane (methylene bromide)	7.50E-06	NA	Below
2-Butanone (MEK)	2.70E-06	3.93E+01	Below
Carbazole	9.00E-07	NA	Below
Carbon Tetrachloride	2.25E-05	4.40E-04	Below
Chlorobenzene	3.95E-04	2.33E+01	Below
Chloroform	1.65E-05	2.80E-04	Below
Chlorine	1.40E-05	2.00E-01	Below
Chloromethane	1.15E-05	NA	Below
2-Chloronaphthalene	1.20E-09	NA	Below
Crotonaldehyde	4.95E-06	3.80E-01	Below
Decachlorobiphenyl	1.35E-10	NA	Below
Dichlorobiphenyl	3.70E-10	NA	Below
1,2-Dichloroethane (ethylene dichloride)	1.45E-05	2.50E-04	Below
Dichloromethane	1.45E-04	1.60E-03	Below
1,2-Dichloropropane	1.65E-05	2.31E+01	Below
2,4-Dinitrophenol	9.00E-08	NA	Below
Ethylbenzene	1.55E-05	2.90E+01	Below
Formaldehyde	8.24E-03	5.10E-04	Exceeds
Heptachlorobiphenyl	3.30E-11	NA	Below
Hexachlorobiphenyl	2.75E-10	NA	Below
Heptachlorodibenzo-p-dioxins	1.00E-09	NA	Below
Heptachlorodibenzo-p-furans	1.20E-10	NA	Below
Hexachlorodibenzo-p-dioxins	8.00E-07	NA	Below
Hexachlorodibenzo-p-furans	1.40E-10	NA	Below
Hydrogen chloride	1.20E-03	5.00E-02	Below
Methanol	1.35E-01	1.73E+01	Below
Monochlorobiphenyl	1.10E-10	NA	Below
4-Nitrophenol	5.50E-08	NA	Below
Octachlorodibenzo-p-dioxins	3.30E-08	NA	Below
Octachlorodibenzo-p-furans	4.40E-11	NA	Below
Pentachlorodibenzo-p-dioxins	7.50E-10	NA	Below

Treasure Valley Forest Products - Lodge Logs
Toxic Summary Sheet

Pollutant	Total TAPS (lb/hr)	IDAPA 58.01:01.585/ 586 -EL/ (lb/hr)	PTE Emission Rate vs. EL
Pentachlorodibenzo-p-furans	2.10E-10	NA	Below
Pentachlorobiphenyl	6.00E-10	NA	Below
Pentachlorophenol	2.55E-08	3.30E-02	Below
Perylene	2.60E-10	NA	Below
Phenol	2.55E-05	1.27E+00	Below
Propanal	1.60E-06	NA	Below
Propionaldehyde	3.05E-05	2.87E-02	Below
Styrene	9.50E-04	6.67E+00	Below
2,3,7,8-Tetrachlorodibenzo-p-dioxins	4.30E-12	NA	Below
Tetrachlorodibenzo-p-dioxins	2.35E-10	NA	Below
2,3,7,8-Tetrachlorodibenzo-p-furans	4.50E-11	NA	Below
Tetrachlorodibenzo-p-furans	3.75E-10	NA	Below
Tetrachlorobiphenyl	1.25E-09	NA	Below
Tetrachloroethene	1.90E-05	1.30E-02	Below
Trichlorobiphenyl	1.30E-09	NA	Below
1,1,1-Trichloroethane	1.55E-05	NA	Below
Trichloroethene	1.50E-05	1.79E+01	Below
Toluene	4.60E-04	2.50E+01	Below
2,4,6-Trichlorophenol	1.10E-08	1.20E-03	Below
Vinyl Chloride	9.00E-06	9.40E-04	Below
o-Xylene	1.25E-05	2.90E+01	Below
Antimony	3.95E-06	3.30E-02	Below
Arsenic	1.10E-05	1.50E-06	Exceeds
Barium	8.50E-05	3.30E-02	Below
Beryllium	5.50E-07	2.80E-05	Below
Cadmium (volatile metal)	2.05E-06	3.70E-06	Below
Chromium, total	1.05E-05	3.30E-02	Below
Chromium, hexavalent	1.75E-06	3.30E-02	Below
Cobalt	3.25E-06	3.30E-03	Below
Copper	2.45E-05	6.70E-02	Below
Iron	4.95E-04	3.33E-01	Below
Lead (volatile metal)	2.40E-05	NA	Below
Manganese	8.00E-04	3.33E-01	Below
Mercury (volatile metal)	1.75E-06	7.00E-03	Below
Molybdenum	1.05E-06	3.33E-01	Below
Nickel	1.65E-05	2.70E-05	Below
Phosphorus	1.35E-05	7.00E-03	Below
Potassium	1.95E-02	NA	Below
Selenium (volatile metal)	1.40E-06	1.30E-02	Below
Silver	8.50E-04	7.00E-03	Below
Sodium	1.80E-04	NA	Below
Tin	1.15E-05	7.00E-03	Below
Vanadium	4.90E-07	3.00E-03	Below
Yttrium	1.50E-07	6.70E-02	Below
Zinc	2.10E-04	6.67E-01	Below

Treasure Valley Forest Products - Lodge Logs
Wood Waste Boiler

Hours of Operation 6240 hr/yr Based on charging woodbox once per day, which fuels boiler for 24 hours, five days per week.
Heat Input = 0.5 MMBtu/hr
Throughput 175.0 lbs wood scraps/day

Pollutant	Emission Factor	Units	Reference	CAA-112(b) NAAQS	Emissions lb/hr	Emissions TPY	SDWA 58.01, 01.585/5 86 - EL lb/hr	PTE Emission Rate vs. EL
Particulate Matter	1.33E+01	g/kg	1	N	0.10	0.30		
Sulfur Dioxide	2.50E-02	lb/MMBtu	2	N	1.25E-02	3.90E-02		
Nitrogen Oxides	4.90E-01	lb/MMBtu	2	N	2.45E-01	7.64E-01		
Carbon Monoxide	6.00E-01	lb/MMBtu	2	N	3.00E-01	9.36E-01		
VOC	1.70E-02	lb/MMBtu	3	N	8.50E-03	2.65E-02		
Benzo(a)anthracene	6.50E-08	lb/MMBtu	3	Y	3.25E-08	1.01E-07	NA	Below
Benzo(a)pyrene	2.80E-08	lb/MMBtu	3	Y	1.30E-08	4.06E-08	2.00E-06	Below
Benzo(b)fluoranthene	1.00E-07	lb/MMBtu	3	Y	5.00E-08	1.56E-07	NA	Below
Benzo(k)fluoranthene	1.60E-07	lb/MMBtu	3	Y	8.00E-08	2.50E-07	NA	Below
Benzo(e)fluoranthene	3.60E-08	lb/MMBtu	3	Y	1.80E-08	5.62E-08	NA	Below
Chrysene	3.80E-08	lb/MMBtu	3	Y	1.90E-08	5.93E-08	NA	Below
Dibenzo(a,h)anthracene	9.10E-09	lb/MMBtu	3	Y	4.55E-09	1.42E-08	NA	Below
Indeno(1,2,3-c,d)pyrene	8.70E-08	lb/MMBtu	3	Y	4.35E-08	1.30E-07	NA	Below
Phenanthrene	7.00E-06	lb/MMBtu	3	N	3.50E-06	0.00E+00	NA	Below
Pyrene	3.70E-06	lb/MMBtu	3	N	1.85E-06	0.00E+00	NA	Below
Acenaphthene	9.10E-07	lb/MMBtu	3	N	4.55E-07	0.00E+00	NA	Below
Acenaphthylene	5.00E-06	lb/MMBtu	3	N	2.50E-06	0.00E+00	NA	Below
Anthracene	3.00E-06	lb/MMBtu	3	N	1.50E-06	0.00E+00	NA	Below
Benzo(e)pyrene	2.60E-09	lb/MMBtu	3	Y	1.30E-09	4.06E-09	NA	Below
Benzo(g,h,i)perylene	9.30E-08	lb/MMBtu	3	Y	4.65E-08	1.45E-07	NA	Below
Fluoranthene	1.60E-06	lb/MMBtu	3	N	8.00E-07	0.00E+00	NA	Below
Fluorene	3.40E-06	lb/MMBtu	3	N	1.70E-06	0.00E+00	NA	Below
Naphthalene	9.70E-05	lb/MMBtu	3	Y	4.85E-05	1.51E-04	3.33	Below
2-Methylnaphthalene	1.60E-07	lb/MMBtu	3	N	8.00E-08	0.00E+00	NA	Below
Acetaldehyde	8.30E-04	lb/MMBtu	3	Y	4.15E-04	1.29E-03	3.00E-03	Below
Acetophenone	3.20E-09	lb/MMBtu	3	Y	1.60E-09	4.99E-09	NA	Below
Acrolein	4.00E-03	lb/MMBtu	3	Y	2.00E-03	6.24E-03	0.017	Below
Benzene	4.20E-03	lb/MMBtu	3	Y	2.10E-03	6.55E-03	8.00E-04	Exceeds
bis(2-Ethylhexyl)phthalate	4.70E-08	lb/MMBtu	3	Y	2.35E-08	7.33E-08	2.80E-02	Below
Bromomethane (methylene bromide)	1.50E-05	lb/MMBtu	3	Y	7.50E-06	2.34E-05	NA	Below
2-Butanone (MEK)	5.40E-06	lb/MMBtu	3	Y	2.70E-06	8.42E-06	39.3	Below
Carbazole	1.80E-06	lb/MMBtu	3	N	9.00E-07	0.00E+00	NA	Below
Carbon Tetrachloride	4.50E-05	lb/MMBtu	3	Y	2.25E-05	7.02E-05	4.40E-04	Below
Chlorobenzene	7.90E-04	lb/MMBtu	3	Y	3.95E-04	1.23E-03	23.3	Below
Chloroform	3.30E-05	lb/MMBtu	3	Y	1.65E-05	5.15E-05	2.80E-04	Below
Chlorine	2.80E-05	lb/MMBtu	3	Y	1.40E-05	4.37E-05	0.2	Below
Chloromethane	2.30E-05	lb/MMBtu	3	N	1.15E-05	0.00E+00	NA	Below
2-Chloronaphthalene	2.40E-09	lb/MMBtu	3	N	1.20E-09	0.00E+00	NA	Below
Crotonaldehyde	9.90E-06	lb/MMBtu	3	N	4.95E-06	0.00E+00	0.38	Below
Decachlorobiphenyl	2.70E-10	lb/MMBtu	3	N	1.35E-10	0.00E+00	NA	Below
Dichlorobiphenyl	7.40E-10	lb/MMBtu	3	N	3.70E-10	0.00E+00	NA	Below
1,2-Dichloroethane (ethylene dichloride)	2.90E-05	lb/MMBtu	3	Y	1.45E-05	4.52E-05	2.50E-04	Below
Dichloromethane	2.90E-04	lb/MMBtu	3	N	1.45E-04	0.00E+00	1.60E-03	Below
1,2-Dichloropropane	3.30E-05	lb/MMBtu	3	N	1.65E-05	0.00E+00	23.133	Below
2,4-Dinitrophenol	1.80E-07	lb/MMBtu	3	Y	9.00E-08	2.81E-07	NA	Below
Ethylbenzene	3.10E-05	lb/MMBtu	3	Y	1.55E-05	4.84E-05	29	Below
Formaldehyde	4.40E-03	lb/MMBtu	3	Y	2.20E-03	6.86E-03	5.10E-04	Exceeds
Heptachlorobiphenyl	6.60E-11	lb/MMBtu	3	N	3.30E-11	0.00E+00	NA	Below
Hexachlorobiphenyl	5.50E-10	lb/MMBtu	3	N	2.75E-10	0.00E+00	NA	Below
Heptachlorodibenzo-p-dioxins	2.00E-09	lb/MMBtu	3	Y	1.00E-09	3.12E-09	NA	Below
Heptachlorodibenzo-p-furans	2.40E-10	lb/MMBtu	3	Y	1.20E-10	3.74E-10	NA	Below
Hexachlorodibenzo-p-dioxins	1.60E-06	lb/MMBtu	3	Y	8.00E-07	2.50E-06	NA	Below
Hexachlorodibenzo-p-furans	2.80E-10	lb/MMBtu	3	Y	1.40E-10	4.37E-10	NA	Below
Hydrogen chloride	2.39E-03	lb/MMBtu	4	Y	1.20E-03	3.73E-03	0.05	Below
Monochlorobiphenyl	2.20E-10	lb/MMBtu	3	N	1.10E-10	0.00E+00	NA	Below
4-Nitrophenol	1.10E-07	lb/MMBtu	3	Y	5.50E-08	1.72E-07	NA	Below
Octachlorodibenzo-p-dioxins	6.60E-08	lb/MMBtu	3	Y	3.30E-08	1.03E-07	NA	Below
Octachlorodibenzo-p-furans	8.80E-11	lb/MMBtu	3	Y	4.40E-11	1.37E-10	NA	Below
Pentachlorodibenzo-p-dioxins	1.50E-09	lb/MMBtu	3	Y	7.50E-10	2.34E-09	NA	Below
Pentachlorodibenzo-p-furans	4.20E-10	lb/MMBtu	3	Y	2.10E-10	6.55E-10	NA	Below
Pentachlorobiphenyl	1.20E-09	lb/MMBtu	3	N	6.00E-10	0.00E+00	NA	Below
Pentachlorophenol	5.10E-08	lb/MMBtu	3	Y	2.55E-08	7.96E-08	0.033	Below
Perylene	5.20E-10	lb/MMBtu	3	N	2.60E-10	0.00E+00	NA	Below
Phenol	5.10E-05	lb/MMBtu	3	Y	2.55E-05	7.96E-05	1.27	Below
Propanal	3.20E-06	lb/MMBtu	3	N	1.60E-06	0.00E+00	NA	Below
Propionaldehyde	6.10E-05	lb/MMBtu	3	Y	3.05E-05	9.52E-05	0.0287	Below
Styrene	1.90E-03	lb/MMBtu	3	Y	9.50E-04	2.98E-03	6.67	Below
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.60E-12	lb/MMBtu	3	Y	4.30E-12	1.34E-11	NA	Below
Tetrachlorodibenzo-p-dioxins	4.70E-10	lb/MMBtu	3	Y	2.35E-10	7.33E-10	NA	Below
2,3,7,8-Tetrachlorodibenzo-p-furans	9.00E-11	lb/MMBtu	3	Y	4.50E-11	1.40E-10	NA	Below
Tetrachlorodibenzo-p-furans	7.50E-10	lb/MMBtu	3	Y	3.75E-10	1.17E-09	NA	Below
Tetrachlorobiphenyl	2.50E-09	lb/MMBtu	3	N	1.25E-09	0.00E+00	NA	Below
Tetrachloroethene	3.80E-05	lb/MMBtu	3	Y	1.90E-05	5.93E-05	1.30E-02	Below
Trichlorobiphenyl	2.60E-09	lb/MMBtu	3	N	1.30E-09	0.00E+00	NA	Below
1,1,1-Trichloroethane	3.10E-05	lb/MMBtu	3	N	1.55E-05	0.00E+00	NA	Below
Trichloroethane	3.00E-05	lb/MMBtu	3	N	1.50E-05	0.00E+00	17.93	Below
Toluene	9.20E-04	lb/MMBtu	3	Y	4.60E-04	1.44E-03	25	Below
2,4,6-Trichlorophenol	2.20E-08	lb/MMBtu	3	Y	1.10E-08	3.43E-08	1.20E-03	Below
Vinyl Chloride	1.80E-05	lb/MMBtu	3	Y	9.00E-06	2.81E-05	9.40E-04	Below
p-Xylene	2.50E-05	lb/MMBtu	3	Y	1.25E-05	3.90E-05	29	Below
Antimony	7.90E-06	lb/MMBtu	5	Y	3.95E-06	1.23E-05	0.033	Below
Arsenic	2.20E-05	lb/MMBtu	5	Y	1.10E-05	3.43E-05	1.50E-06	Exceeds
Barium	1.7E-04	lb/MMBtu	5	N	8.50E-05	0.00E+00	0.033	Below
Beryllium	1.10E-06	lb/MMBtu	5	Y	5.50E-07	1.72E-06	2.80E-05	Below
Cadmium (total metal)	4.10E-06	lb/MMBtu	5	Y	2.05E-06	6.40E-06	3.70E-06	Below

Revision 1 - 04/16/2007

Treasure Valley Forest Products - Lodge Logs
Wood Waste Boiler

Hours of Operation 6240 hr/yr Based on charging woodbox once per day, which fuels boiler for 24 hours, five days per week.
Heat Input = 0.5 MMBtu/hr
Throughput 175.0 lbs wood scraps/day

Pollutant	Emission Factor	Units	Reference	CAA 112(b) HAP?	Emissions lb/hr	Emissions T/Y	IDAPA 68.01.01.985/5 86 - EL lb/hr	PTE Emission Rate vs. EL
Chromium, total	2.10E-05	lb/MMBtu	5	Y	1.05E-05	3.28E-05	0.033	Below
Chromium, hexavalent	3.50E-06	lb/MMBtu	5	N	1.75E-06	0.00E+00	0.033	Below
Cobalt	6.50E-06	lb/MMBtu	5	Y	3.25E-06	1.01E-05	0.0033	Below
Copper	4.9E-05	lb/MMBtu	5	N	2.45E-05	0.00E+00	0.067	Below
Iron	9.9E-04	lb/MMBtu	5	N	4.95E-04	0.00E+00	0.333	Below
Lead (volatile metal)	4.80E-05	lb/MMBtu	5	Y	2.40E-05	7.48E-05	NA	Below
Manganese	1.60E-03	lb/MMBtu	5	Y	8.00E-04	2.50E-03	0.333	Below
Mercury (volatile metal)	3.50E-06	lb/MMBtu	5	Y	1.75E-06	5.46E-06	0.007	Below
Molybdenum	2.1E-06	lb/MMBtu	5	N	1.05E-06	0.00E+00	0.333	Below
Nickel	3.30E-05	lb/MMBtu	5	Y	1.65E-05	5.15E-05	2.70E-05	Below
Phosphorus	2.70E-05	lb/MMBtu	5	Y	1.35E-05	4.21E-05	0.007	Below
Potassium	3.9E-02	lb/MMBtu	5	N	1.95E-02	0.00E+00	NA	Below
Selenium (volatile metal)	2.80E-06	lb/MMBtu	5	Y	1.40E-06	4.37E-06	0.013	Below
Silver	1.7E-03	lb/MMBtu	5	N	8.50E-04	0.00E+00	0.007	Below
Sodium	3.6E-04	lb/MMBtu	5	N	1.80E-04	0.00E+00	NA	Below
Tin	2.3E-05	lb/MMBtu	5	N	1.15E-05	0.00E+00	0.007	Below
Vanadium	9.8E-07	lb/MMBtu	5	N	4.90E-07	0.00E+00	0.003	Below
Yttrium	3.0E-07	lb/MMBtu	5	N	1.50E-07	0.00E+00	0.067	Below
Zinc	4.2E-04	lb/MMBtu	5	N	2.10E-04	0.00E+00	0.667	Below
Total HAPs					0.01	0.03		

References

- 1 "Emissions from Outdoor Wood-Burning Residential Hot Water Furnaces", EPA/600/SR-98/017, February 1998 (included in App D)
- 2 AP-42, Table 1.6-2
- 3 AP-42, Table 1.6-3
- 4 NCASI provides 2.39E-03 lb/mmbtu as the mean (BBE1-BBK), Table A-20 Technical Bulletin No 858, "Compilation of Air Toxic and Total Hydrocarbon Emissions Data Sulfite and Non-Chemical Pulp Mills and Update" February 2003 (included in App D)
- 5 AP-42, Table 1.6-4

Treasure Valley Forest Products - Lodge Logs

Sawmill

Sawmill will be located inside a building and there will be no stack vent.

The sawmill will process 12,000,000 Bd-ft/yr of debarked logs or 46,154 bd-ft/day.

Hours of operation: 2,080 hr/yr

From Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Attachment A. 75% Ponderosa Pine, 25% Yellow Pine - Tex.

Density: 2.056 lb/bd-ft

Maximum hourly production rate: $\frac{47.45 \text{ ton logs}}{8 \text{ hr}}$

Maximum annual production rate: $\frac{12,338 \text{ ton logs}}{\text{yr}}$

Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Sawing Logs

PM = 0.350 lb/ton logs

PM10 = 0.200 lb/ton logs

IDEQ Adjustment Factor = 0.76 allowed for wood moisture content of 35%

Potential Emissions

Sawmill	lb/hr	tpy
PM	1.58	1.64
PM10	0.90	0.94

Potential Emissions Calculations:

Maximum Hourly PM emissions:

$$\frac{47.45}{8} \frac{\text{tons}}{\text{hr}} \times 0.350 \frac{\text{lb PM}}{\text{ton logs}} \times 0.76 = 1.58 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$12,338 \frac{\text{tons}}{\text{yr}} \times 0.350 \frac{\text{lb PM}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 0.76 = 1.64 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{47.45}{8} \frac{\text{tons}}{\text{hr}} \times 0.200 \frac{\text{lb PM10}}{\text{ton logs}} \times 0.76 = 0.90 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$12,338 \frac{\text{tons}}{\text{yr}} \times 0.200 \frac{\text{lb PM10}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 0.76 = 0.94 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Dry Kiln

Logs are dried in a 2000 sq ft building or drying kiln heated to 130 F with steam radiators. No stack vent emissions.

Hours of operation: 8,760 hr/yr

Maximum hourly production rate: $\frac{50,000 \text{ BF}}{24 \text{ hr}}$

Maximum annual production rate: $1,000,000 \frac{\text{BF}}{\text{yr}}$

From NCASI SARA Handbook Chemical-Specific Information for Wood Products Facilities (2006)

Methanol = 0.065 lb/MBF Table 4, Small Scale, Ponderosa Pine

Formaldehyde = 0.0029 lb/MBF Table 5, Small Scale, Ponderosa Pine

From NCASI Environmental Resource Handbook (10/31/2004) for Wood Products Plants, Chapter 3, Table 3.3.1.2-1, Kiln, Steam-Heated

VOC = 3.30 lb/MBF expressed as carbon

PM = 0.009 lb/MBF

PM10 = 0.005 lb/MBF Using ratio of PM to PM10 for Kilns from Idaho DEQ Emission Factor Guide for Wood Industry (1/1997)

Potential Emissions

Dry Kiln	lb/hr	tpy
VOC	6.88	1.65
PM	0.02	0.005
PM10	0.01	0.003
HAPs	0.14	0.03

BF - board feet

MBF - thousand board feet

tpy - tons per year

Potential Emissions Calculations:

Maximum Hourly VOC emissions:

$$\frac{50,000 \text{ BF}}{24 \text{ hr}} \times \frac{3.30 \text{ lb VOC}}{1000 \text{ BF}} = 6.88 \text{ lb/hr VOC}$$

Maximum Annual VOC emissions:

$$1,000,000 \frac{\text{BF}}{\text{yr}} \times \frac{3.30 \text{ lb VOC}}{1000 \text{ BF}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 1.65 \text{ tpy VOC}$$

Maximum Hourly PM emissions:

$$\frac{50,000 \text{ BF}}{24 \text{ hr}} \times \frac{0.01 \text{ lb PM}}{1000 \text{ BF}} = 0.02 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$1,000,000 \frac{\text{BF}}{\text{yr}} \times \frac{0.01 \text{ lb PM}}{1000 \text{ BF}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.005 \text{ tpy PM}$$

Maximum-Hourly PM10 emissions:

$$\frac{50,000 \text{ BF}}{24 \text{ hr}} \times \frac{0.01 \text{ lb PM10}}{1000 \text{ BF}} = 0.0108 \text{ lb/hr PM10}$$

Treasure Valley Forest Products - Lodge Logs

Dry Kiln

Maximum Annual PM10 emissions:

$$1,000,000 \frac{\text{BF}}{\text{yr}} \times \frac{0.01 \text{ lb PM10}}{1000 \text{ BF}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.0026 \text{ tpy PM10}$$

Maximum Hourly Methanol emissions:

$$\frac{50,000}{24} \frac{\text{BF}}{\text{hr}} \times \frac{0.065 \text{ lb}}{1000 \text{ BF}} = 0.14 \text{ lb/hr Methanol} \quad \text{Below TAP EL (17.3 lb/hr)}$$

Maximum Annual Methanol emissions:

$$1,000,000 \frac{\text{BF}}{\text{yr}} \times \frac{0.065 \text{ lb}}{1000 \text{ BF}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.03 \text{ tpy Methanol}$$

Maximum Hourly Formaldehyde emissions:

$$\frac{50000}{24} \frac{\text{BF}}{\text{hr}} \times \frac{0.0029 \text{ lb}}{1000 \text{ BF}} = 6.04\text{E-}03 \text{ lb/hr Formaldehyde} \quad \text{Exceeds TAP EL (5.1E-4 lb/hr)}$$

Maximum Annual Formaldehyde emissions:

$$1,000,000 \frac{\text{BF}}{\text{yr}} \times \frac{0.0029 \text{ lb}}{1000 \text{ BF}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.001 \text{ tpy Formaldehyde}$$

Total HAPs 0.14 lb/hr
 Total HAPs 0.03 tpy

Maximum Annual Formaldehyde emissions:	Calculation used in Formaldehyde modeling - see footnote in Table 5 of modeling results report
$13,000,000 \frac{\text{BF}}{\text{yr}} \times \frac{0.0029 \text{ lb}}{1000 \text{ BF}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.019 \text{ tpy Formaldehyde}$	

Treasure Valley Forest Products - Lodge Logs

Debarker

Maximum Debarker throughput is estimated at 13,000,000 board feet per year or 50,000 board feet per day.

Emissions are uncontrolled.

The Debarker includes a chop saw that is used to cut logs to a desired length.

No stack from the Debarker

Hours of operation: 2,080 hr/yr

From Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Attachment A. 75% Ponderosa Pine, 25% Yellow Pine - Tex.
Density: 2.056 lb/bd-ft

Maximum hourly production rate: $\frac{51 \text{ ton logs}}{8 \text{ hr}}$

Maximum annual production rate: $\frac{13366 \text{ ton logs}}{\text{yr}}$

Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Log Debarking

PM = 0.024 lb/ton logs

PM10 = 0.011 lb/ton logs

Log sawing and debarking can result in the release of particulate matter.

Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Chop Saw (see note below)

PM = 0.350 lb/ton logs

PM10 = 0.200 lb/ton logs

IDEQ Adjustment Factor = 0.76 allowed for wood moisture content of 35%

Note: Both AP-42, Section 10.9, Table 10.9-7 Engineered Wood Products Manufacturing and NCASI Environmental Resource Handbook for Wood Products Plants 2-3, Chapter 2: Woodyard and Wood Furnish Preparation © 2004 National Council for air and Stream improvement, have no available information to support a reasonable particulate matter emission factor for either debarking or log cutting. Therefore, the debarker emission calculations are provided for informational purposes only and not included in the dispersion modeling. This is further described in the modeling report (Appendix F).

Division of Environmental Protection, Office of Air Quality for West Virginia, Reference Document for General Permit Number G10-B, for the construction, modification, relocation, operation, and prevention and control of air pollution from the operation of coal preparation plants and coal handling operations

Potential Emissions

Debarker/Chop Saw	lb/hr	tpy
PM	1.86	1.94
PM10	1.05	1.09

Potential Emissions Calculations (Debarker):

Maximum Hourly PM emissions:

$$\frac{51}{8} \frac{\text{tons}}{\text{hr}} \times 0.024 \frac{\text{lb PM}}{\text{ton logs}} = 0.15 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$13,366 \frac{\text{tons}}{\text{yr}} \times 0.024 \frac{\text{lb PM}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.16 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{51}{8} \frac{\text{tons}}{\text{hr}} \times 0.011 \frac{\text{lb PM10}}{\text{ton logs}} = 0.07 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$13,366 \frac{\text{tons}}{\text{yr}} \times 0.011 \frac{\text{lb PM10}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.07 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Debarker

Potential Emissions Calculations (Chop Saw):

Maximum Hourly PM emissions:

$$\frac{51.41}{8} \frac{\text{tons}}{\text{hr}} \times 0.350 \frac{\text{lb PM}}{\text{ton logs}} \times 0.76 = 1.71 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$13,366 \frac{\text{tons}}{\text{yr}} \times 0.350 \frac{\text{lb PM}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 0.76 = 1.78 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{51.41}{8} \frac{\text{tons}}{\text{hr}} \times 0.200 \frac{\text{lb PM10}}{\text{ton logs}} \times 0.76 = 0.98 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$13,366 \frac{\text{tons}}{\text{yr}} \times 0.200 \frac{\text{lb PM10}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 0.76 = 1.02 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Debarker Screen

Maximum Debarker throughput is estimated at 13,000,000 board feet per year or 50,000 board feet per day.

Emissions are uncontrolled.

The Debarker includes a chop saw that is used to cut logs to a desired length.

No stack from the Debarker

Hours of operation: 2,080 hr/yr

From Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Attachment A. 75% Ponderosa Pine, 25% Yellow Pine - Tex.
Density: 2.056 lb/bd-ft

Maximum hourly production rate: $\frac{51 \text{ ton logs}}{8 \text{ hr}}$

Maximum annual production rate: $\frac{13366 \text{ ton logs}}{\text{yr}}$

Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Log Debarking

PM = 0.024 lb/ton logs

PM10 = 0.011 lb/ton logs

Division of Environmental Protection, Office of Air Quality for West Virginia, Reference Document for General Permit Number G10-8, for the construction, modification, relocation, operation, and prevention and control of air pollution from the operation of coal preparation plants and coal handling operations

Potential Emissions

Debarker (Total)	lb/hr	tpy
PM	0.15	0.16
PM10	0.07	0.07

Potential Emissions Calculations (Debarker):

Maximum Hourly PM emissions:

$$\frac{51}{8} \frac{\text{tons}}{\text{hr}} \times 0.024 \frac{\text{lb PM}}{\text{ton logs}} = 0.15 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$13,366 \frac{\text{tons}}{\text{yr}} \times 0.024 \frac{\text{lb PM}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.16 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{51}{8} \frac{\text{tons}}{\text{hr}} \times 0.011 \frac{\text{lb PM10}}{\text{ton logs}} = 0.07 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$13,366 \frac{\text{tons}}{\text{yr}} \times 0.011 \frac{\text{lb PM10}}{\text{ton logs}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.07 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Green Lathe Cyclone

The green lathe will be used to roughly size green logs prior to drying.

Logs will normally be debarked in the Debarker/Sorter prior to being sized but debarking can occur.

Chips and other wood residues are drawn through a cyclone and collected in one of two adjacent bins.

Capacity of bins is 2800 cubic feet. Each bin (2) will be filled every 14 hours of operation.

Wood is 35% moisture

Bulk density of wood is equal to the density of dry wood (2.056 lb/bd-ft) divided by the moisture content of the wood.

Bulk density: 38 lb/cf

Maximum hourly production rate: $\frac{69 \text{ ton bone-dry wood}}{14 \text{ hr}}$

Maximum annual production rate: $10,264 \frac{\text{ton bone-dry wood}}{\text{yr}}$

Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Cyclone Exhaust, Dry and Green Chips

PM = 0.5 lb/ton bone-dry wood

PM10 = 0.25 lb/ton bone-dry wood

Potential Emissions

Green Lathe Cyclone	lb/hr	tpy
PM	2.47	2.57
PM10	1.23	1.28

Potential Emissions Calculations:

Maximum Hourly PM emissions:

$$\frac{69 \text{ bone-dry w}}{14 \text{ hr}} \times \frac{0.50 \text{ lb PM}}{\text{ton bone-dry wood}} \times = 2.47 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$10,264 \frac{\text{bone-dry w}}{\text{yr}} \times \frac{0.50 \text{ lb PM}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 2.57 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{69 \text{ bone-dry w}}{14 \text{ hr}} \times \frac{0.25 \text{ lb PM10}}{\text{ton bone-dry wood}} = 1.23 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$10,264 \frac{\text{bone-dry w}}{\text{yr}} \times \frac{0.25 \text{ lb PM10}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 1.28 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Green Lathe Cyclone Bin

Capacity of bins is 2800 cubic feet. Each bin (2) will be filled every 14 hours of operation.

Wood is 35% moisture

Bulk density of wood is equal to the density of dry wood (2.056 lb/bd-ft) divided by the moisture content of the wood.

Bulk density: 38 lb/cf

Maximum hourly production rate: $\frac{69}{14} \frac{\text{ton bone-dry wood}}{\text{hr}}$

Maximum annual production rate: 10,264 $\frac{\text{ton bone-dry wood}}{\text{yr}}$

AP-42 Section 13.2.4 (Aggregate Handling and Storage Piles)

Wind Speed 3.5 mph
 Material moisture content 4.3 %
 PM Particle size multiplier 0.74
 PM = 0.001 lb/ton bone-dry wood
 PM10 Particle size multiplier 0.35
 PM10 = 0.001 lb/ton bone-dry wood

Division of Environmental Protection, Office of Air Quality for West Virginia, Reference Document for General Permit Number G10-B, for the construction, modification, relocation, operation, and prevention and control of air pollution from the operation of coal preparation plants and coal handling operations

Control Factor = 70% Based on full enclosure from truck

Potential Emissions

Green Lathe Cyclone Bin	lb/hr	tpy
PM	0.005	0.005
PM10	0.002	0.002

Potential Emissions Calculations:

Maximum Hourly PM emissions:

$$\frac{69}{14} \frac{\text{bone-dry wc}}{\text{hr}} \times \frac{0.001 \text{ lb PM}}{\text{ton bone-dry wood}} \times 70\% = 0.005 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$10,264 \frac{\text{bone-dry wc}}{\text{yr}} \times \frac{0.001 \text{ lb PM}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 70\% = 0.005 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{69}{14} \frac{\text{bone-dry wc}}{\text{hr}} \times \frac{0.001 \text{ lb PM10}}{\text{ton bone-dry wood}} \times 70\% = 0.002 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$10,264 \frac{\text{bone-dry wc}}{\text{yr}} \times \frac{0.001 \text{ lb PM10}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 70\% = 0.002 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Processor A Cyclone

Processor A will be used to shave dry logs

Shavings and other wood residues are drawn through a cyclone and collected in an overhead bin.

Capacity of bin is 4800 cubic feet. Each bin will be filled every 120 hours of operation.

Wood is 15% moisture

Bulk density of wood is equal to the density of dry wood (2.056 lb/bd-ft) divided by the moisture content of the wood.

Bulk density: 29 lb/cf

Maximum hourly production rate: $\frac{59}{120} \frac{\text{ton bone-dry wood}}{\text{hr}}$

Maximum annual production rate: $1,026 \frac{\text{ton bone-dry wood}}{\text{yr}}$

Idaho DEQ Emission Factor Guide for Wood Industry (1/1997), Cyclone Exhaust, Dry and Green Chips

PM = 0.5 lb/ton bone-dry wood

PM10 = 0.25 lb/ton bone-dry wood

Potential Emissions

Processor A Cyclone	lb/hr	tpy
PM	0.25	0.26
PM10	0.12	0.13

Potential Emissions Calculations:

Maximum Hourly PM emissions:

$$\frac{59}{120} \frac{\text{bone-dry w}}{\text{hr}} \times \frac{0.50 \text{ lb PM}}{\text{ton bone-dry wood}} = 0.25 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$1,026 \frac{\text{bone-dry w}}{\text{yr}} \times \frac{0.50 \text{ lb PM}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.26 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{59}{120} \frac{\text{bone-dry w}}{\text{hr}} \times \frac{0.25 \text{ lb PM10}}{\text{ton bone-dry wood}} = 0.12 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$1,026 \frac{\text{bone-dry w}}{\text{yr}} \times \frac{0.25 \text{ lb PM10}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 0.13 \text{ tpy PM10}$$

Treasure Valley Forest Products - Lodge Logs

Processor A Bin Cyclone

Capacity of bin is 4800 cubic feet. Each bin will be filled every 120 hours of operation (not continuously).

Wood is 15% moisture

Bulk density of wood is equal to the density of dry wood (2.056 lb/bd-ft) divided by the moisture content of the wood.

Bulk density: 29 lb/cf

Maximum hourly production rate: $\frac{59 \text{ ton bone-dry wood}}{120 \text{ hr}}$

Maximum annual production rate: $1,026 \frac{\text{ton bone-dry wood}}{\text{yr}}$

AP-42 Section 13.2.4 (Aggregate Handling and Storage Piles)

Wind Speed 3.5 mph
 Material moisture content 4.3 %
 PM Particle size multiplier 0.74
 PM = 0.001 lb/ton bone-dry wood
 PM10 Particle size multiplier 0.35
 PM10 = 0.001 lb/ton bone-dry wood

Division of Environmental Protection, Office of Air Quality for West Virginia, Reference Document for General Permit Number G10-B, for the construction, modification, relocation, operation, and prevention and control of air pollution from the operation of coal preparation plants and coal handling operations

Control Factor = 70% Based on full enclosure from truck

Potential Emissions

Processor A Bin Cyclone	lb/hr	tpy
PM	0.000	0.000
PM10	0.000	0.000

Potential Emissions Calculations:

Maximum Hourly PM emissions:

$$\frac{59 \text{ bone-dry w}}{120 \text{ hr}} \times \frac{0.001 \text{ lb PM}}{\text{ton bone-dry wood}} \times 70\% = 0.0005 \text{ lb/hr PM}$$

Maximum Annual PM emissions:

$$1,026 \frac{\text{bone-dry w}}{\text{yr}} \times \frac{0.001 \text{ lb PM}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 70\% = 0.0005 \text{ tpy PM}$$

Maximum Hourly PM10 emissions:

$$\frac{59 \text{ bone-dry w}}{120 \text{ hr}} \times \frac{0.001 \text{ lb PM10}}{\text{ton bone-dry wood}} \times 70\% = 0.0002 \text{ lb/hr PM10}$$

Maximum Annual PM10 emissions:

$$1,026 \frac{\text{bone-dry w}}{\text{yr}} \times \frac{0.001 \text{ lb PM10}}{\text{ton bone-dry wood}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 70\% = 0.0002 \text{ tpy PM10}$$