LANE REGIONAL AIR PROTECTION AGENCY
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REVIEW REPORT

Emerald Forest Products, Inc. – Plant #3 **Permit No. 202526**
82898 North Butte Road
Creswell, Oregon 97426

Source Information:

SIC	2436 – Softwood Veneer Drying
NAICS	321212 – Veneer Mills, Softwood
Source Categories (LRAPA title 37, Table 1)	B.57 – Plywood Manufacturing and/or Veneer Drying

Source Categories (continued)	C.3 – Electing to maintain the source's netting basis.
Public Notice Category	III

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	NA
Emission credits	NA
Compliance schedule	NA
Source test [date(s)]	Within 18 months of permit issuance

COMS	NA
CEMS	NA
Ambient monitoring	NA

Reporting Requirements:

Annual report (due date)	March 15
NSPS Report (due date)	NA
Monthly report (due dates)	NA

Excess emissions report	Yes
Other reports	NA

Air Programs:

NSPS (list subparts)	NA
NESHAP (list subparts)	NA
CAM	NA
Regional Haze (RH)	NA
SM-80	Yes
Part 68 Risk Management	NA
Title V	NA
ACDP (SIP)	NA
Major HAP source	NA

Federal major source	NA
New Source Review (NSR)	NA
Prevention of Significant Deterioration (PSD)	NA
Acid Rain	NA
Greenhouse gases (due date)	March 31
Clean Air Mercury Rule	NA
TACT	NA
>20 Megawatts	NA

Permittee Identification

1. Emerald Forest Products, Inc., Plant #3 ("EFP" or "the facility") owns and operates a veneer drying production facility located at 82898 North Butte Road in Creswell, Oregon.

General Background Information

2. The facility began operations in the 1950's as a plywood manufacturing plant, using Veneer Dryer #3 and additional equipment for manufacturing plywood. In 1998, the facility installed Veneer Dryer #5 and is currently only manufacturing softwood veneer to supplement the EFP, Plant #1 located in Eugene. The facility no longer manufactures plywood.

   The facility operates one (1) Burley scrubber and one (1) Venturi (Riley) Scrubber to control particulate matter emissions from the two (2) direct natural gas-fired veneer dryers. The combined maximum production rate for both veneer dryers is 31.0 thousand square feet per hour on a 3/8-inch basis (Msf-3/8") and 225,000 Msf-3/8" per year.

Reasons for Permit Action and Fee Basis

3. This permit action is a renewal of an existing Standard Air Contaminant Discharge Permit (Standard ACDP) which was issued on July 28, 2017 and was scheduled to expire on July 28, 2022. A timely renewal application was submitted on January 28, 2022. There have been no changes to the facility since the last permit renewal.

   The facility must obtain a Standard ACDP and is subject to the associated fees for Standard ACDPs because it operates a process listed in LRAPA title 37, Table 1 Part B.57 – Plywood manufacturing and/or veneer drying and is electing to maintain a netting basis as identified in LRAPA title 37, Table 1 Part C.3.

Attainment Status

4. The facility is located in an attainment area for all criteria pollutants.

Compliance and Enforcement History

5. The facility was last inspected on July 13, 2021 (see PCADs No. 2769). A Full Compliance Evaluation (FCE) was conducted, and the facility was found to be in compliance with permit conditions.

6. During the prior permit term, LRAPA received and investigated four (4) complaints regarding potential visible emissions from the facility. None of the complaint investigations resulted in enforcement activity.

7. The following is a summary of enforcement activity related to the facility:

   7.a. On March 29, 2011, Notice of Non-Compliance (NON) No. 3289 was issued to the facility for failing to submit an annual report in a timely manner. A civil penalty was not issued, and the file was closed on April 5, 2011, following submittal of the annual report.

   7.b. On September 16, 2002, Notice of Non-Compliance (NON) No. 2391 was issued to the facility for failing to keep all contaminant control equipment at full operating efficiency. A civil penalty was not issued, and the file was closed on November 12, 2002.

Emission Units Description

8. The following table includes the emission units and control devices at the facility.

EU ID	Emission Unit Description	Pollution Control Device (PCD)	Construction/Modification Date
Dryer 3	Natural Gas-Fired Veneer Dryer #3	Burley Wet Scrubber	Modified: January 1981 (Scrubber installation)
Dryer 5	Natural Gas-Fired Veneer Dryer #5	Venturi Wet Scrubber	Constructed: February 25, 1998 (Dryer and Scrubber)

Performance Testing

9. The facility last conducted a performance test of the two (2) natural gas veneer dryers on November 18 and 19, 2003 to verify emission factors for VOCs, methanol, and formaldehyde. The resulting emission factors have been used to establish plant site emission limits. Additionally, the facility last conducted performance testing for PM emissions on December 15 and 16, 1998.

Results from source testing conducted in 2003 have been incorporated into the permit and are listed below:

Emission Unit	Pollutant	Emission Factor (lb/Msf-3/8") [2]
Dryer 3	VOC (as propane) [1]	0.293
	Methanol	0.019
	Formaldehyde	0.017
Dryer 5	VOC (as propane) [1]	0.573
	Methanol	0.014
	Formaldehyde	0.026

[1] VOC emissions measured during the source test and reported on an "as carbon" basis have been multiplied by 1.22 to convert to an "as propane" basis.

[2] Emission factors used to calculate the facility's potential to emit are representative of the highest run average from either Dryer 3 or Dryer 5. See emission detail sheets.

10. Performance testing of the veneer dryers for PM, VOCs, and HAPs (methanol and formaldehyde) is being required within 18 months of issuance of this renewal permit due to the length of time since the previous tests were conducted, and to verify adequate operation of the wet scrubbers.

Specific Emission Limitations

11. The permit limits fugitive emissions from leaving the facility's property in accordance with LRAPA 48-015.

12. The veneer dryers (EU: Dryer 3 and Dryer 5) are subject to the visible emission limitations under LRAPA 33-060(3)(a)(B)(i) and (ii). These emission units may not have visible emissions exceeding 20 percent at any time, or visible emissions exceeding a daily average of 10 percent on more than two days within any 12-month period, with the days separated from each other by at least 30 days.

13. The veneer dryers (EU: Dryer 3 and Dryer 5) are subject to the particulate matter emission limitations under LRAPA 32-015(2)(b)(A). For sources installed, constructed or modified on or after June 1, 1970, but prior to April 16, 2015, where all representative compliance source test results prior to April 16, 2015 demonstrate emissions no greater than 0.080 gr/dscf, the particulate matter emission limit is 0.10 gr/dscf.

Typically Achievable Control Technology (TACT)

14. LRAPA 32-008 requires that an existing emission unit at a source meet TACT if the emission unit meets the following criteria: the emissions of criteria pollutants are greater than five (5) tons per year of particulate or greater than ten (10) tons per year of any gaseous pollutant, the emissions unit is not subject to the emissions standards under LRAPA title 30, title 32, title 33, title 38, title 39, or title 46 for the pollutants emitted, and the source is required to have a permit.

The veneer dryers are subject to the requirements of LRAPA 33-060 and are therefore not required to meet TACT.

Plant Site Emission Limits (PSELs)

15. Provided below is a summary of the baseline emission rate, netting basis, and PSELs:

Pollutant	Baseline Emission Rate (tons/yr)(1)	Netting Basis (NB)		Plant Site Emission Limit (PSEL)			Significant Emission Rate (tons/yr)	Capacity(2) (tons/yr)
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	Increase Over NB (tons/yr)		
PM	19	19	19	33	33	14	25	32.6
PM_{10}	19	19	19	28	33	14	15	32.6
$PM_{2.5}$	N/A	11	24(15.b)	16	33	9	10	32.6
CO	27	27	27	99	2.3	72	100	2.25
NO_X	6	6	6	39	14	33	40	13.5
SO_2	0	0	0	N/A	N/A	N/A	40	<1
VOC	28	28	28	68	67(15.d)	39	40	74.6
GHG	9,812	9,812	9,812	74,000	15,400	64,188	75,000	15,387

(1) The Baseline Emission Rate (BER) is based on the operation of Veneer Dryer 3, one (1) plywood press, one (1) natural gas boiler, and one (1) sander with cyclone. During the baseline period, veneer drying capacity was 72 MMsf-3/8" at 8,000 hours per year, and plywood press capacity was 50 MMsf-3/8" at 6,000 hours per year. See baseline emission details.

(2) Capacity is the potential to emit under the source's physical and operational design.

15.a. The baseline emission rates for PM, PM_{10}, CO, NO_X, and SO_2 were determined in a previous permitting action and remain unchanged. The baseline for GHGs is based upon actual emissions from 2004 calendar year and remains unchanged.

15.b. The $PM_{2.5}$ netting basis was established in the previous permitting action as 59% of the PM_{10} netting basis, however, due to improved emissions information, the previous $PM_{2.5}$ netting basis was recalculated during this renewal as 100% of the PM_{10} netting basis. The corrected $PM_{2.5}$ netting basis includes a 5 ton per year "true-up." See emission details.

15.c. In accordance with OAR 340-222-0041(3), the PM, PM_{10}, $PM_{2.5}$, CO, NOx and VOC PSELs are set at the source's potential to emit and incorporate updated emission factors as applicable. No PSELs are set for SO_2 in accordance with LRAPA 42-0020(3) because this pollutant is emitted facility-wide below the de minimis, as defined in LRAPA title 12.

15.d. VOC emissions from the source, if operating at capacity, are greater than the SER over the netting basis, therefore, the VOC PSEL is set at a level of one ton less than the SER. A review of annual reports submitted by the facility over the last 10 years indicates that actual VOC emissions are much lower than the VOC PSEL as established.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

16. The facility is not subject to LRAPA's PSD requirements for PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, CO, and VOCs in LRAPA title 38 because there are no increases in the proposed PSELs over the netting basis by more than the Significant Emission Rate (SER) as defined in LRAPA title 12, Table 2.

Criteria Pollutants

17. A major source is a facility that has the potential to emit more than 100 tons per year of any criteria pollutant. This facility is not a major source of criteria pollutant emissions.

Federal Hazardous Air Pollutants (HAPs)

18. A major source is a facility that has the potential to emit (PTE) 10 tons per year or more of any single HAP or 25 tons per year or more of combined HAPs. The facility is not a major source because it does not currently emit HAPs above major source thresholds. With this permit renewal, Total HAP and Single HAP PSELs have been established to demonstrate that emissions remain below the major source thresholds. The facility's 2020 Actual HAP emissions, PTE HAP emissions, and HAP PSELs are as follows (see Emission Detail Sheets for more information):

HAP	2020 Actual Emissions (tons/yr)	Potential to Emit (tons/yr)	PSEL (tons/yr)
Total HAPs	6.48	21.19	24
Highest Single HAP (Acetaldehyde)	2.36	7.70	9

18.a. Because acetaldehyde is the highest single HAP emitted by the facility, compliance with the 9 ton/yr Single HAP PSEL may be demonstrated by 12-month rolling emission calculations for acetaldehyde.

18.b. The facility is currently a synthetic minor (SM-80) because the total HAP potential to emit is greater than 80% of the major source threshold.

Toxic Air Contaminants (TACs) and Cleaner Air Oregon (CAO)

19. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This existing source has not been notified by LRAPA and is therefore not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2020 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in the rule. All 187 hazardous air pollutants are on the list of approximately 600 toxic air contaminants. The hazardous air pollutants and toxic air contaminants listed below were reported by the source in 2020 and verified by LRAPA. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

Toxic Air Contaminant	CAS No. or DEQ ID	HAP?	2020 Annual Emissions (lb/yr)
Acetaldehyde	75-07-0	Yes	4,683.12
Acetone	67-64-1	No	4,063.02

Toxic Air Contaminant	CAS No. or DEQ ID	HAP?	2020 Annual Emissions (lb/yr)
Acrolein	107-02-8	Yes	620.05
Ammonia	7664-41-7	No	322.24
Benzene	71-43-2	Yes	392.53
Ethyl benzene	100-41-4	Yes	0.69
Formaldehyde	50-00-0	Yes	2,065.94
Hexane	110-54-3	Yes	0.46
Methanol	67-56-1	Yes	2,134.81
Methyl ethyl ketone	78-93-3	No	130.84
Methyl isobutyl ketone	108-10-1	Yes	179.05
Phenol	108-95-2	Yes	1,101.84
Propionaldehyde	123-38-6	Yes	247.91
Propylene	115-07-1	No	53.37
Styrene	100-42-5	Yes	103.30
Toluene	108-88-3	Yes	512.27
Xylene (mixture)	1330-20-7	Yes	270.56
Polycyclic aromatic hydrocarbons (PAHs)	401	Yes	0.01
Benzo[a]pyrene	50-32-8	Yes	0.0001
Naphthalene	91-20-3	Yes	0.03
Arsenic and compounds	7440-38-2	Yes	0.02
Barium and compounds	7440-39-3	No	0.44
Beryllium and compounds	7440-41-7	Yes	0.001
Cadmium and compounds	7440-43-9	Yes	0.11
Chromium VI	18540-29-9	Yes	0.14
Cobalt and compounds	7440-48-4	Yes	0.01
Copper and compounds	7440-50-8	No	0.09
Lead and compounds	7439-92-1	Yes	0.05
Manganese and compounds	7439-96-5	Yes	0.04
Mercury and compounds	7439-97-6	Yes	0.03
Molybdenum trioxide	1313-27-5	No	0.17
Nickel compounds, insoluble	365	Yes	0.21
Selenium and compounds	7782-49-2	Yes	0.002
Vanadium (fume or dust)	7440-62-2	No	0.23
Zinc and compounds	7440-66-6	No	2.92
Total TACs (lb/yr)			16,887
Total TACs (tons/yr)			8.44

Toxic Release Inventory

20. The Toxics Release Inventory (TRI) is a federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment, over which LRAPA has no regulatory authority. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the

Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:

- Cancer or other chronic human health effects;
- Significant adverse acute human health effects; or
- Significant adverse environmental effects.

There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process, or otherwise use these chemicals in amounts above established thresholds must submit annual TRI reports on each chemical.

This facility has not reported to the TRI program.

New Source Performance Standards (NSPS)

21. The facility is not subject to any NSPS.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

22. 40 CFR Part 63, Subpart DDDD – National Emission Standards for Hazardous Air Pollutants for Plywood and Composite Wood Products is not applicable because the facility is not a major source of HAPs.

Greenhouse Gas (GHG) Reporting Applicability

23. OAR Chapter 340, division 215 is applicable to the facility because actual emissions of greenhouse gases are more than 2,500 metric tons (2,756 short tons) of CO_2 equivalents (CO_2e) per year.

24. The facility was notified of the applicable GHG reporting requirement in 2019 and invoiced for past actual emissions since 2009. The facility must continue to report GHG emissions for the calendar year if annual emissions are equal to or greater than 2,500 metric tons of CO_2e.

Recordkeeping Requirements

25. The facility is required to keep and maintain a record of the information in permit Condition 19 for a period of at least five (5) years.

Reporting Requirements

26. The facility is required to submit an annual report by March 15th each year including emission calculations demonstrating compliance with the PSELs established in the permit, and other information required by permit Condition 20.

27. The facility must report greenhouse gas (GHG) emissions by March 31st each year if emissions for the calendar year are equal to or greater than 2,500 metric tons of CO_2 equivalents (CO_2e) in accordance with OAR 340 division 215.

Public Notice

28.

The draft permit was on public notice May 17, 2023 to June 21, 2023. No written comments were recieved during the 35-day comment period.

CG/cmw
6/20/2023

Total Plant Site Emissions		
Pollutant	**Annual Emissions (tons/yr)**	
	Potential to Emit (PTE)	**2020 Actual**
PM	32.63	9.99
PM_{10}	32.63	9.99
$PM_{2.5}$	32.63	9.99
NOx	13.50	4.13
CO	2.25	0.69
SO_2	0.22	0.09
VOC	74.63	22.84
GHG	15,387	6,049
Total HAPs		
Acetaldehyde	7.70	2.36
Acrolein	1.01	0.31
Benzene	0.64	0.20
Formaldehyde	3.32	1.02
Ethylbenzene	1.22E-03	4.78E-04
Hexane	8.07E-04	3.17E-04
Methanol	3.45	1.06
Methyl isobutyl ketone	0.29	0.09
Naphthalene	3.84E-05	1.51E-05
Phenol	2.93	0.90
Polycyclic aromatic hydrocarbons (PAHs)	1.28E-05	5.04E-06
Propionaldehyde	0.41	0.12
Styrene	0.17	0.05
Toluene	0.83	0.25
m,p-Xylene	0.44	0.13
Arsenic Compounds	2.56E-05	1.01E-05
Beryllium Compounds	1.54E-06	6.04E-07
Cadmium Compounds	1.41E-04	5.54E-05
Chromium Compounds	1.79E-04	7.05E-05
Cobalt Compounds	1.08E-05	4.23E-06
Lead Compounds	6.40E-05	2.52E-05
Manganese Compounds	4.87E-05	1.91E-05
Mercury Compounds	3.33E-05	1.31E-05
Nickel Compounds	2.69E-04	1.06E-04
Selenium Compounds	3.07E-06	1.21E-06
Total HAP	**21.19**	**6.48**
Highest Single HAP (Acetaldehyde)	**7.70**	**2.36**

Natural Gas-Fired Veneer Dryer Production Data				
Parameter	**Hourly**		**Annual**	
Maximum PTE Production [1]				
Dryer 3 Maximum Veneer Production	13.0	Msf-3/8"/hr	95,000	Msf-3/8"/yr
Dryer 5 Maximum Veneer Production	18.0	Msf-3/8"/hr	130,000	Msf-3/8"/yr
Total Combined Maximum Veneer Production	31.0	Msf-3/8"/hr	225,000	Msf-3/8"/yr
Dryer 3 Maximum Natural Gas Usage	0.012	MMscf/hr	102.5	MMscf/yr
Dryer 5 Maximum Natural Gas Usage	0.018	MMscf/hr	153.7	MMscf/yr
Total Combined Maximum Natural Gas Usage	0.029	MMscf/hr	256.1	MMscf/yr
2020 Actual Production				
2020 Dryer 3 Veneer Production	--		19,446	Msf-3/8"/yr
2020 Dryer 5 Veneer Production	--		49,419	Msf-3/8"/yr
2020 Total Combined Veneer Production	--		68,864.8	Msf-3/8"/yr
2020 Dryer 3 Natural Gas Usage	--		29.5	MMscf/yr
2020 Dryer 5 Natural Gas Usage	--		71.2	MMscf/yr
2020 Total Combined Natural Gas Usage	--		100.7	MMscf/yr

Natural Gas-Fired Veneer Dryer Emission Estimates (Dryer 3 and 5 Combined)					
Pollutant	**Emission Factors**		**Emission Factor Reference**	**Annual Emission Estimates (tons/yr)**	
				Potential to Emit (PTE)	**2020 Actual Emissions**
Heated Zone/Direct Natural Gas-Fired Emissions					
PM	0.290	lb/Msf-3/8"	DEQ AQGP-010 [2]	32.63	9.99
PM_{10}	0.290	lb/Msf-3/8"	DEQ AQGP-010 [2]	32.63	9.99
$PM_{2.5}$	0.290	lb/Msf-3/8"	DEQ AQGP-010 [2]	32.63	9.99
CO	0.020	lb/Msf-3/8"	DEQ AQGP-010 [2]	2.25	0.69
NOx	0.120	lb/Msf-3/8"	DEQ AQGP-010 [2]	13.50	4.13
SO_2	1.7	lb/MMscf	DEQ AQ-EF05	0.22	0.09
VOC	0.573	lb/Msf-3/8"	Source Test 11/2003 [3]	64.51	19.74
GHG	120,142	lb/MMscf	40 CFR Part 98	15,387	6,049
Acetaldehyde	0.062	lb/Msf-3/8"	DEQ AQGP-010 [2]	6.98	2.13
Acrolein	0.009	lb/Msf-3/8"	DEQ AQGP-010 [2]	1.01	0.31
Benzene	0.0057	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.64	0.20
Ethylbenzene	0.0095	lb/MMscf	SCAQMD - AB 2588 [4]	1.22E-03	4.78E-04
Formaldehyde	0.026	lb/Msf-3/8"	Source Test 11/2003 [3]	2.93	0.90
Hexane	0.0063	lb/MMscf	SCAQMD - AB 2588 [4]	8.07E-04	3.17E-04
Methanol	0.019	lb/Msf-3/8"	Source Test 11/2003 [3]	2.14	0.65
Methyl isobutyl ketone	0.0026	lb/Msf-3/8"	AP-42 Chapter 10.5 [5]	0.29	0.09
Naphthalene	0.0003	lb/MMscf	SCAQMD - AB 2588 [4]	3.84E-05	1.51E-05
Phenol	0.006	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.68	0.21
Polycyclic aromatic hydrocarbons (PAHs)	0.0001	lb/MMscf	SCAQMD - AB 2588 [4]	1.28E-05	5.04E-06
Propionaldehyde	0.0016	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.18	0.06
Styrene	0.0015	lb/Msf-3/8"	AP-42 Chapter 10.5 [5]	0.17	0.05
Toluene	0.0074	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.83	0.25
m,p-Xylene	0.0039	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.44	0.13
Arsenic Compounds	0.0002	lb/MMscf	AP-42 Chapter 1.4	2.56E-05	1.01E-05
Beryllium Compounds	0.000012	lb/MMscf	AP-42 Chapter 1.4	1.54E-06	6.04E-07
Cadmium Compounds	0.0011	lb/MMscf	AP-42 Chapter 1.4	1.41E-04	5.54E-05
Chromium compounds	0.0014	lb/MMscf	AP-42 Chapter 1.4	1.79E-04	7.05E-05
Cobalt Compounds	0.000084	lb/MMscf	AP-42 Chapter 1.4	1.08E-05	4.23E-06
Lead Compounds	0.0005	lb/MMscf	AP-42 Chapter 1.4	6.40E-05	2.52E-05
Manganese Compounds	0.00038	lb/MMscf	AP-42 Chapter 1.4	4.87E-05	1.91E-05
Mercury Compounds	0.00026	lb/MMscf	AP-42 Chapter 1.4	3.33E-05	1.31E-05
Nickel Compounds	0.0021	lb/MMscf	AP-42 Chapter 1.4	2.69E-04	1.06E-04
Selenium Compounds	0.000024	lb/MMscf	AP-42 Chapter 1.4	3.07E-06	1.21E-06
Cooling Section Emissions					
VOC	0.044	lb/Msf-3/8"	DEQ AQGP-010 [2]	4.95	1.52
Acetaldehyde	0.0034	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.38	0.12
Acrolein	BDL		DEQ AQGP-010 [2]	--	--
Formaldehyde	0.0015	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.17	0.05
Methanol	0.0057	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.64	0.20
Phenol	0.010	lb/Msf-3/8"	DEQ AQGP-010 [2]	1.13	0.34
Propionaldehyde	0.002	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.23	0.07
Fugitive Emissions					
VOC	0.046	lb/Msf-3/8"	DEQ AQGP-010 [2]	5.18	1.58
Acetaldehyde	0.003	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.34	0.10
Formaldehyde	0.002	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.23	0.07
Methanol	0.006	lb/Msf-3/8"	DEQ AQGP-010 [2]	0.68	0.21
Phenol	0.01	lb/Msf-3/8"	DEQ AQGP-010 [2]	1.13	0.34

Notes:

1 Maximum hourly and annual veneer dryer production is based on Emission Detail Sheets in Review Report dated August 18, 2015. Maximum hourly and annual gas usage is based on burner heat input rating. Dryer 3 has two natural gas burners (4 MMBtu/hr and 8 MMBtu/hr) and Dryer 5 has four natural gas burners (two at 6 MMBtu/hr each and two at 3 MMBtu/hr each).

2 Based on Oregon DEQ AQGP-010, expiration date 10/01/2027, Section 13.5: Emission factors for Direct Natural Gas-Fired Veneer Dryers with Wet Scrubber control. PM_{10} and $PM_{2.5}$ are 100% of PM.

3 Based on source test conducted November 18-19, 2003. Methanol and formaldehyde emission factors are representative of the highest run average for either Dryer 3 or Dryer 5, multiplied by 1.22, to calculate VOC "as propane".

4 South Coast Air Quality Management District (SCAQMD) AB 2588 Quadrennial Air Toxic Emissions Inventory Reporting Procedures, Default Emission Factors for Fuel Combustion (June 2020), for Natural Gas Combustion <10 MMBtu/hr.

5 From AP-42 Chapter 10.5, Table 10.5-3 for uncontrolled, direct natural gas-fired, heated zones, softwood veneer dryers since no control is expected from scrubbers for these pollutants.

Combined Veneer Dryer Criteria Pollutant Emission Factors (all zones)		
PM	0.290	lb/Msf-3/8"
PM_{10}	0.290	lb/Msf-3/8"
$PM_{2.5}$	0.290	lb/Msf-3/8"
CO	0.020	lb/Msf-3/8"
NOx	0.120	lb/Msf-3/8"
VOC	0.663	lb/Msf-3/8"
Combined Veneer Dryer HAP Emission Factors (all zones)		
Acetaldehyde	0.068	lb/Msf-3/8"
Acrolein	0.009	lb/Msf-3/8"
Benzene	0.0057	lb/Msf-3/8"
Formaldehyde	0.030	lb/Msf-3/8"
Ethylbenzene	0.0095	lb/MMscf
Hexane	0.0063	lb/MMscf
Methanol	0.031	lb/Msf-3/8"
Methyl isobutyl ketone	0.003	lb/Msf-3/8"
Naphthalene	0.0003	lb/MMscf
Phenol	0.026	lb/Msf-3/8"
Polycyclic aromatic hydrocarbons (PAHs)	0.0001	lb/MMscf
Propionaldehyde	0.004	lb/Msf-3/8"
Styrene	0.002	lb/Msf-3/8"
Toluene	0.0074	lb/Msf-3/8"
m,p-Xylene	0.0039	lb/Msf-3/8"
Arsenic Compounds	0.0002	lb/MMscf
Beryllium Compounds	0.000012	lb/MMscf
Cadmium Compounds	0.0011	lb/MMscf
Chromium Compounds	0.0014	lb/MMscf
Cobalt Compounds	0.000084	lb/MMscf
Lead Compounds	0.0005	lb/MMscf
Manganese Compounds	0.00038	lb/MMscf
Mercury Compounds	0.00026	lb/MMscf
Nickel Compounds	0.0021	lb/MMscf
Selenium Compounds	0.000024	lb/MMscf
Total HAP (Drying Veneer)	**0.188**	**lb/Msf-3/8"**
Total HAP (Natural Gas Combustion)	**0.022**	**lb/MMscf**
Single HAP (Acetaldehyde)	**0.068**	**lb/Msf-3/8"**

Baseline Production Data				
Parameter	**Short-term**		**Annual**	
Veneer Dryer 3 Production	12.0	Msf-3/8"/hr	72,000	Msf-3/8"/yr
Veneer Dryer Hours of Operation	--		8,000	hr/yr
Plywood Press Production	8.3	Msf-3/8"/hr	50,022	Msf-3/8"/yr
Plywood Press Hours of Operation	--		6,000	hr/yr
Resin Usage	2,374	lb/hr	14,245,473	lb/yr
Boiler Natural Gas Combustion	0.0035	MMscf/hr	7.0	MMscf/yr
Boiler Hours of Operation	--		2,000	hr/yr
Sanderdust Throughput	--		6.0	BDT/yr

Notes: Baseline Production Data and Emission Estimates were determined in the permit issued July 22, 1998 and are reproduced here for informational purposes.

Baseline Emission Estimates				
Pollutant	**Emission Factors**		**Emission Factor Reference**	**Baseline Annual Emission Estimates (tons/yr)**
Veneer Dryer 3				
PM	0.29	lb/Msf-3/8"	DEQ 11/15/1993	13.92
PM_{10}	0.29	lb/Msf-3/8"	DEQ 11/15/1993	13.92
NOx	0.12	lb/Msf-3/8"	DEQ 11/15/1993	5.76
VOC	0.22	lb/Msf-3/8"	DEQ 11/15/1993	10.56
CO	0.57	lb/Msf-3/8"	DEQ 11/15/1993	27.36
Plywood Press				
PM	0.203	lb/Msf-3/8"	AP-42 Chapter 10.5	5.08
PM_{10}	0.203	lb/Msf-3/8"	AP-42 Chapter 10.5	5.08
VOC	0.0024	lb/lb resin	Borden Chemical, Inc.	17.09
Formaldehyde	0.0005	lb/lb resin	Borden Chemical, Inc.	3.56
Phenol	0.0008	lb/lb resin	Borden Chemical, Inc.	5.70
Methanol	0.0011	lb/lb resin	Borden Chemical, Inc.	7.83
Natural Gas Boiler				
PM	12.00	lb/MMscf	AP-42 Chapter 1.4	0.04
PM_{10}	12.00	lb/MMscf	AP-42 Chapter 1.4	0.04
SO_2	0.600	lb/MMscf	AP-42 Chapter 1.4	0.00
NOx	100.00	lb/MMscf	AP-42 Chapter 1.4	0.35
VOC	8.00	lb/MMscf	AP-42 Chapter 1.4	0.03
CO	21.00	lb/MMscf	AP-42 Chapter 1.4	0.07
Sanderdust Cyclone				
PM	2.0	lb/BDT	DEQ 11/15/1993	0.006

Total Baseline Emissions (tons/yr)	
PM	19
PM_{10}	19
NOx	6
VOC	28
CO	27
SO_2	0
Formaldehyde	4
Phenol	6
Methanol	8

$PM_{2.5}$ Netting Basis Calculations and Corrections			
Parameter	**PM**	**PM_{10}**	**$PM_{2.5}$**
Previous Permit Calculations (Permit Expiring July 28, 2022)			
Potential to Emit	32.6	27.7	16.3
Baseline [1]	19	19	NA
Unassigned Emissions	0	0	0
Netting Basis	19	19	11.2 [2]
Corrected Permit Calculations (due to improved information) [4]			
Potential to Emit	32.6	32.6	32.6
Proposed PSEL	33	33	33
Netting Basis with Corrected R Factor	19	19	19 [2]
Proposed Netting Basis with True-up	19	19	24 [5]
PSEL Increase over Netting Basis	14	14	9
Significant Emission Rate	25	15	10
Increase Exceed SER?	No	No	No

Notes:

1 Changes to baseline emission factors were not required for PM or PM_{10}. See Baseline Emission Details for more information.

2 $PM_{2.5}$ Netting Basis (tons/yr) = PM_{10} Netting Basis (tons/yr) x R Factor

Previous R Factor = 0.59 [3]

Corrected R Factor = 1.00 [3]

3 R Factor = $PM_{2.5}$ PTE (tons/yr) / PM_{10} PTE (tons/yr)

4 PM_{10}/$PM_{2.5}$ emission factors for Direct Natural Gas-Fired Veneer Dryers with Wet Scrubber control in the Oregon DEQ AQGP-010, Section 13.5 (expiration date 10/01/2027) have been updated to represent 100% of PM. The previous $PM_{2.5}$ netting basis has been corrected according to the procedures in Oregon DEQ Internal Management Directive (IMD) No. AQ-00-0017.

5 The netting basis for $PM_{2.5}$ includes a 5 ton/year true-up in accordance with the procedures in Oregon DEQ IMD AQ-00-0015.
Proposed $PM_{2.5}$ Netting Basis (tons/yr) = Required $PM_{2.5}$ PSEL (tons/yr) - [$PM_{2.5}$ SER (tons/yr) - 1]