

**LANE REGIONAL AIR PROTECTION AGENCY (LRAPA)
TITLE V OPERATING PERMIT**

REVIEW REPORT

**Rosboro Lumber Company, L.L.C.
2509 Main Street
Springfield, Oregon 97477**

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Acronyms Used in the Review Report

| | |
|------------------|---|
| CO | carbon monoxide |
| CFR | Code of Federal Regulations |
| EU | emission unit |
| HAP | hazardous air pollutant |
| LRAPA | Lane Regional Air Protection Agency |
| MACT | maximum achievable control technology |
| NAAQS | national ambient air quality standard |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NOx | nitrogen oxides (as nitrogen dioxide) |
| NSR | new source review |
| OAR | Oregon Administrative Rules |
| PM ₁₀ | particulate matter less than or equal to (\leq) 10 microns in diameter |
| Plywood MACT | National Emission Standard for Hazardous Air Pollutants from the plywood and composite wood products manufacturing facilities in 40 CFR 63 Subpart DDDD |
| PSD | prevention of significant deterioration |
| PSEL | plant site emission limit |
| SSM Plan | startup, shutdown and malfunction plan |
| SO ₂ | sulfur dioxide |
| Subpart DDDD | National Emission Standard for Hazardous Air Pollutants from the plywood and composite wood products manufacturing facilities in 40 CFR 63 Subpart DDDD |
| VOC | volatile organic compounds |

Review Report

Rosboro Lumber Company, LLC

Permit No. 207050

This review report is for proposed significant permit modification of Title V permit No. 207050, which was issued to Rosboro Lumber Company, L.L.C. (Rosboro) on December 11, 2002. The modification adds permit conditions to ensure that the operation of the Rosboro facility complies with the National Emissions Standard for Hazardous Air Pollutants (NESHAP) for the Plywood and Composite Wood Products (PCWP) Maximum Achievable Control Technology (MACT) standard in 40 CFR 63 Subpart DDDD. In addition, Rosboro is requesting that significant modification procedures be used to incorporate the August 1, 2008 construction permit LRAPA issued for a dry lumber kiln project.

Permit action on this significant modification would be issued as an addendum to the current Title V permit. Rosboro submitted an application for renewal of its Title V permit on September 2, 2005. As set forth in Oregon Administrative Rule (OAR) 340-218-0120(2), the current/existing Title V permit will be in effect until LRAPA issues the permit renewal. The addendum will be incorporated within the Title V permit at renewal.

The intent of this review report is to provide the legal and factual basis for modifying/adding conditions to an existing Title V permit. In most cases, the legal basis for a permit condition is detailed within the applicable regulation being cited. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this review report is used to provide a more thorough explanation of the factual basis for the draft permit conditions [OAR 340-218-0120(1)(f)].

Facility Description

The Rosboro facility is located at 2509 Main Street in Springfield, Oregon. The facility processes whole logs into manufactured wood products including dimensional lumber, laminated beams, veneer and plywood. Steam for operating the facility equipment such as the veneer dryers and dry lumber kilns is produced onsite by three identical hog fuel-fired boilers.

Scope of the Proposed Modification

The evaluation of this modification, and if issued, is according to the provisions of OAR 340-218-0180. The scope of the proposed modification addresses only the following two application requests by Rosboro:

- 1) Incorporate the compliance actions taken by Rosboro to satisfy MACT requirements in the federal regulation that limits hazardous air pollutants (HAP) emitted from PCWP manufacturing [40 CFR 63 Subpart DDDD].
- 2) Conduct an enhanced LRAPA review process so that the operating requirements approved in the August 1, 2008 Construction ACDP for the dry lumber kiln project may be incorporated in the facility's Title V Permit. This entails complying with the external review procedures in OAR 340-218-210 (and OAR 340-218-230).

Table 1 shows the emission units (equipment and processes) affected by the modification. The application, drawings and plans to support the applicant's requests are on file with the LRAPA.

Table 1. Permit Modification – Emission Units (EU) Affected

| ID | Description | Pollution Control Device/Method | Controlled Pollutant(s) |
|--------|----------------------|--|---|
| EU-06 | 2-Veneer Dryers | 3-Hog Fuel Fired Boilers equipped w/integral multiclones (EU-01) | HAP (hazardous air pollutant) VOC (volatile organic compounds) PM ₁₀ (particulate matter < 10 microns) |
| EU-05 | Finishing Operations | Coating Formulation | HAP (hazardous air pollutant) |
| EU-08: | Dry Lumber Kilns | None | None |

For a complete listing of all the emission units at Rosboro, see the Title V Permit posted on the Agency website at: http://lrpa.org/permitting/issued_permits/title_v_operating_permits.php. The following summary provides a more detailed description of the modification.

Modification Summary

- 1) *Incorporate the compliance actions taken by Rosboro to satisfy MACT requirements in the federal regulation that limits hazardous air pollutants (HAP) emitted from PCWP manufacturing [40 CFR 63 Subpart DDDD].*

As listed in 1, incorporate the compliance actions taken by Rosboro to satisfy MACT requirements in the federal regulation that limits hazardous air pollutants (HAP) emitted from PCWP manufacturing [40 CFR 63 Subpart DDDD] Rosboro is subject to the federal NESHAP regulation for Plywood and Composite Wood Products manufacturing in 40 CFR 63 Subpart DDDD (Plywood MACT). Rosboro is requesting the regulatory requirements and its designation for achieving the MACT level of emission control be added to its Title V permit. Specifically, Rosboro must designate how it elects to achieve the required control of the HAP emissions from its softwood veneer dryers. Additionally, they must perform their finishing operations with non-HAP coatings; use required work practices; develop and follow a startup, shutdown and malfunction plan; perform monitoring; and submit periodic compliance reports. For more information regarding the latter requirements, please see the Draft Permit Conditions section of this report. The next paragraph discusses the former requirement, control of the softwood veneer dryers.

Rosboro must use MACT on its two veneer dryers: Dryer #1 is an existing (1960) longitudinal flow dryer manufactured by COE with six decks and 22 zones, indirectly heated with steam supplied from the hog fuel fired boilers. Dryer #2 is an existing dryer (1962) manufactured by Moore with 5 decks and 22 zones, indirectly heated with steam supplied from the hog fuel-fired boilers.

On September 27, 2007, Rosboro applied for and received an extension from October 1, 2007 to April 5, 2008 to be in compliance with the Plywood MACT control requirement for the softwood

veneer dryers. The veneer dryers are currently routed to the existing hog fuel boilers for destruction of PM, VOCs and HAPs. The exhausted emissions from the dryers are captured and drawn through ducting to a duct manifold and exhaust damper system that distributes it as over fire and under fire combustion air to the boilers. Rosboro began controlling emissions from its veneer dryers in 1980, however it asked for and was granted a Plywood MACT compliance extension to April 5, 2008 to design and install a new combustion air damper control system. Previously the damping system could permit uncontrolled exhaust emissions under certain operating scenarios, the new control system ensures that this can no longer happen. The completed damper control system includes electronic control of combustion air supply (exhausted emissions from the veneer dryers) such that it enters into the boiler flame zone.

Combustion units that accept process exhausts into the flame zone (such as the boilers at Rosboro) are exempt from the initial performance testing and operating requirements in the Plywood MACT [63.2260]. To demonstrate initial compliance, Rosboro submitted the prerequisite documentation with their Notification of Compliance Status showing that process exhausts controlled by the combustion unit enter into the flame zone and the required engineering analyses of furnace temperatures of 1943 degrees Fahrenheit and a retention time of 2.1 seconds. These conditions equate to VOC and volatile HAP destruction efficiencies greater than 90 percent.

In addition to the permit conditions that are directly from the Plywood MACT requirements for process units that serve as an add-on control device, draft Permit Condition 3 is added to impose the minimum boiler operating conditions that must be achieved to assure emission reductions will be at least 90 percent, the condition reads: ...at all times the dryers are in operation. At such times, at least two boilers of the three boilers must be in operation producing 18,000 pounds per hour or more of steam.

Finally, it should be noted that:

Pursuant to 40 CFR 63.2252 of the Plywood MACT regulation: For process unit not subject to the compliance options or work practice requirements specified in §63.2240 (including, but not limited to, lumber kilns), you are not required to comply with the compliance options, work practice requirements, performance testing, monitoring, startup, shutdown and malfunction (SSM) plans, and recordkeeping or reporting requirements of 40 CFR 63 Subpart DDDD, or any other requirement in 40 CFR 63 Subpart A, except for the initial notification requirements in in §63.9(b). In addition, Rosboro has satisfied the following requirements: the compliance extension progress milestones timely completion; completed a timely SSM plan; submitted a timely Initial Notification of Compliance Status (In this context "timely" means by the required deadline specified by regulation.).

- 2) *Conduct an enhanced LRAPA review process so that the operating requirements approved in the August 1, 2008 Construction ACDP for the dry lumber kiln project may be incorporated in the facility's Title V Permit. This entails complying with the external review procedures in OAR*

Rosboro LLC ("Rosboro"), Facility ID 207050, requests a Construction - Air Contaminant Discharge Permit to make the following changes to its dry lumber kiln facilities, currently permitted as existing EU-08 Dry Kilns (12 total):

1. Remodel two (2) of the kilns;
2. Remove the remaining ten (10) of the kilns; and
3. Install three new dry kilns.

These proposed changes include a new computer control system, variable frequency (adjustable-speed) drives for the fans; and moisture monitoring equipment. This project is expected to use less energy (electrical and steam consumption), improve lumber drying control and, at completion, use 56% of the current footprint that is used by EU-08 Dry Kiln.

There is no expected increase in PSEL emissions from the kiln project. The VOC and HAP emission factors and resulting emission rates are determined based on a testing and lab analyses conducted by the Department of Wood and Science and Engineering at Oregon State University (OSU). For assessing the dry lumber kiln emissions, OSU simulated operating conditions that are representative of the actual manufacturing conditions at Rosboro including the wood species and kiln temperatures (ref. VOC and HAP Emission from the Drying of Hemlock and Douglas-fir Lumber, OSU, January 28, 2007).

Typically Available Control Technology

Because of such items as kiln size and configuration, temperature and air volume, there is no currently typically (or best) available add-on control device for abating the emissions of dry lumber kilns. Hence, typically available control technology for the Rosboro lumber kiln project is deemed to be: kilns will be maintained and operated at all times at full efficiency and effectiveness including temperature control and leak tightness.

Permitted Emissions

The changes requested by the applicant in the significant permit modification application do not result in an emissions increase. The modifications involve pollution control to assure compliance with a federal NESHAP regulation and evaluate a kiln construction project as a significant modification to incorporate that project into the Title V permit upon project completion/operation.

Rosboro is a pre-existing facility that operates under the Plant Site Emission Limits (PSEL) shown in Table 2.

The existing PSEL for VOC, 179 tons per year, reflects the 90% VOC reduction from the 1980 control of the veneer dryers; the existing VOC PSEL has already been reduced to account for the 90% reduction in veneer dryer emissions. The downward PSEL and baseline adjustments were made at the time Rosboro installed and began using its boilers to control its veneer dryers. The adjustment was made because that added control was to comply with the newly adopted (1979) LRAPA regulation limiting veneer dryer emissions to a 10 % average opacity and a 20% maximum opacity by December 31, 1980 [LRAPA Title 33-060-3.A].

Table 2. Affect of the Modification on the Plant Site Emission Limits (PSEL)

| Pollutant | Baseline ¹ (tons/year) | Existing (Pre-Modification) (tons/year) | | | Proposed (Post-Modification) (tons/year) | | |
|------------------|--------------------------------------|--|-----------------------|-------------------------|---|-----------------------|-------------------------|
| | | PSEL | Increase ² | Unassigned ³ | PSEL | Increase ² | Unassigned ³ |
| PM ₁₀ | 243 | 213 | 0 | 30 | 213 | 0 | 30 |
| CO | 1042 | 1141 | 99 | 0 | 1141 | 99 | 0 |
| NO _x | 109 | 119 | 10 | 0 | 119 | 10 | 0 |
| SO ₂ | 6 | 6 | 0 | 0 | 6 | 0 | 0 |
| VOC | 169 | 179 | 10 | 0 | 179 | 10 | 0 |

¹ Baseline refers to the historical emission rates that occurred at the facility in 1978.

² Increase refers to emissions increases at the facility that are above the 1978 baseline level.

³ Unassigned refers to the unused baseline capacity.

The calculated HAP emissions from the equipment and processes (emissions units) affected by the NESHAP regulation for plywood composite and wood products, for the dry kiln project and from the hog fuel combustion are in the attached detail sheet. A total hazardous air pollutant emission from all the Rosboro emissions units is 45 tons per year. Rosboro has developed many of its HAP emission factors with onsite performance testing. At renewal, Rosboro will be required to re-verify its tested HAP emission factors within the five year permit term.

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

Eugene Springfield is designated “nonattainment” with the PM₁₀ national ambient air quality standard (NAAQS). For a PM₁₀ nonattainment area, the significant emission rate increase that would trigger NSR requirements is 15 ton per year. Because there is not an increase in PM₁₀ from this modification, or that have occurred since the baseline date (1978), Rosboro has not triggered a PM₁₀ NSR review.¹ The Lane County is in “attainment” with the NAAQS for nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compound (VOC). The significant emission rate, or increase in emissions since the baseline date have not triggered the PSD air quality analyses required for these pollutants.

Compliance History

LRAPA has inspected this facility on a regular schedule and found them to be in compliance with existing permit conditions. There are no air quality complaints or current enforcement actions underway.

¹ Although the Eugene Springfield area now meets the PM₁₀ standard, the area remains “nonattainment” because LRAPA has not completed a request for re-designation by the EPA.

Draft Permit Conditions

1. The permittee must comply with the relevant provisions of 40 CFR 63, Subpart DDDD. [40 CFR 63.2231]
2. The reduction in hazardous air pollutants emissions achieved by permit condition number three (3) must be at least 90 percent on a total hydrocarbon basis, as carbon. [40 CFR 63.2240(b)]
3. The emissions from the softwood veneer dryers must be exhausted into the flame zone of the boilers at all times the dryers are in operation. At such times, at least two boilers of the three boilers must be in operation producing 18,000 pounds per hour or more of steam. [40 CFR 63.2240(b)]
4. The permittee must minimize the fugitive emissions from the softwood dryer doors through proper maintenance procedures and through proper balancing of the heated zone exhausts. [40 CFR 63.2241(a)]
5. The miscellaneous coatings in use shall have HAP contents below 0.1 percent by mass for Occupational Safety and Health Administration-defined carcinogens as specified in 29 CFR 1910.1200(d)(4), and below 1.0 percent by mass for other HAP compounds. A material safety data sheet (MSDS) or material content certification document must be maintained onsite for each miscellaneous coating used at the facility. [40 CFR 63.2241(a)]
6. The facility must be in compliance with the compliance options, operating requirements, and the work practice requirements as listed in this Title V permit and in the applicable sections of the 40 CFR 63 Subpart DDDD at all times, except during periods of process unit or control device startup, shutdown, malfunction; and prior to process unit initial startup. The compliance options, operating requirements, and work practice requirements do not apply during times when the process unit(s) subject to the compliance options, operating requirements, and work practice requirements are not operating, or during scheduled startup and shutdown periods, and during malfunctions. These startup and shutdown periods must not exceed the minimum amount of time necessary for these events. [40 CFR 63.2250(a)]
7. The facility must always operate and maintain the affected source, including air pollution control and monitoring equipment, according to the provisions in 40 CFR 63.6(e)(1)(i). [40 CFR 63.2250(b)]
8. The facility must implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in 40 CFR 63.6(e) (3). [40 CFR 63.2250(c)]
9. To the extent practical, startup and shutdown of emission control systems must be scheduled during times when process equipment is also shut down. [40 CFR 63.2251(e)]
10. During periods of startup, shutdown and malfunction (SSM), the permittee must operate in accordance with the SSM Plan. [40 CFR 63.2271]
 - a. Deviations that occur during a period of startup, shutdown, or malfunction are not violations if the permittee demonstrates to LRAPA's satisfaction that the permittee was operating in accordance with the requirements of 40 CFR 63.6(e)(1). LRAPA will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in 40 CFR 63.6(e). [40 CFR 63.2271(b)(2)]

11. The permittee shall certify compliance with the requirements of 40 CFR Subpart DDDD as part of each semi-annual compliance certification. [40 CFR 63.2271 and 40 CFR 63.2281]
 - a. This report must include identification of each instance in which the permittee did not meet each compliance option and operating requirement in Table 7 of Subpart DDDD that applies to the facility. This includes periods of startup, shutdown and malfunctions and periods of control device maintenance. [40 CFR 63.2271(b)]
 - b. The permittee shall report to LRAPA by fax or by telephone within two (2) working days after starting actions inconsistent with the SSM Plan. [40 CFR 63.10(d)(5)(ii)]
 - c. The permittee shall file a written follow-up report with LRAPA within seven (7) days after the end of any SSM event where actions were taken inconsistent with the SSM Plan unless LRAPA has authorized alternative arrangements. [40 CFR 63.10(d)(5)(ii)]
 - d. The permittee must notify LRAPA and the EPA Administrator within 30 days before taking any of the actions specified below:
 - (1) The permittee modifies or replaces the control system for any process unit subject to the compliance options and operating requirements in 40 CFR Part 63, Subpart DDDD. [40 CFR 63.2280(g)(1)]
 - (2) The permittee changes a continuous monitoring parameter or the value or range of values of a continuous monitoring parameter (or operating parameter) for any process unit or control device. [40 CFR 63.2280(g) (3)]
12. The dry kiln drying temperatures shall not exceed 210 degree Fahrenheit when the equipment is in operation, with the exception of:
 - a. the startup and preliminary operation of a new kiln (not to exceed 3 months),
 - b. during an emission related performance test, or
 - c. tests or studies to verify the emission factor/operating parameter (temperature).
13. The permittee shall track and record the board foot volume of the lumber dried in the kilns as a twelve month rolling total, on a wood species-specific basis.

Public Notice

The draft significant permit modification to add the PCWP MACT requirements and new kiln project were on public notice from August 6, 2008 to September 5, 2008. Although a public hearing was not requested by the public, LRAPA held a public hearing on September 11, 2008, in its LRAPA meeting room at 1010 Main Street, Springfield, Oregon. Zero (0) members of the public attended. LRAPA did not receive any comments on the Rosboro review report and/or draft permit. However, to finalize this permit LRAPA has made the following corrections to the review report. These corrections are not substantive in that they do not add new requirements, lessen requirements and/or change the emissions

from the significant modification permit that was placed on public comment. Because no external comments were received and the above LRAPA corrections are not substantive, LRAPA requests an EPA expedited review of this permit.

Correction: *In the review report, the placement of the hyphen in the term "hog-fuel fired" has been changed to "hog fuel-fired". At the review report page 5, paragraph 1, the space in "over fire" and in "under fire" have been removed and now read as "overfire" and "underfire". Also on page 5, in paragraph 2 "VOC and volatile HAP" is inserted to clarify that these are the pollutants reduced by 90%.*

Correction: *On page 6 of the review report, the following statements were removed "Because of this, LRAPA is lowering allowable VOC emissions by 10 tons per year. This results in 10 tons per year of unassigned VOC emissions. For additional discussion, see the Permitted Emissions section of this report. The August 1, 2008 construction permit and associated operating conditions to be placed in the Title V permit are attached. This action will be performed when LRAPA receives the notice of construction completion for the project."*

On page 7 of the review report, the statement "the proposed kiln project will result in a lower emission rate than is in the PSEL" has been removed because there was no requested increase or decrease in the PSEL for VOC. The corresponding information in Table 2 on page 7 that was incorrect and has been corrected to show the existing and proposed PSEL remain unchanged at 179 tons per year. In addition to no change in the PSEL from this permit action, the baseline in Table 2 is 169 tons per year and the unassigned emissions are zero.

Correction: *Draft permit condition number two (2) referred to permit condition number one (1) instead of condition number three (3), the following correction has been made:*

2. The reduction in hazardous air pollutants emissions achieved by permit condition number three (3) ~~1~~ must be at least 90 percent on a total hydrocarbon basis, as carbon. [40 CFR 63.2240(b)]

Correction: *The following two conditions are no longer an option and are being deleted/removed because the permittee did not request the use of a control device maintenance exemption at least 30 days prior to April 2008 (their compliance date) as per §63.2280(e).*

Public Notice

The proposed significant permit modification was sent to EPA on December 3, 2008, for a 45-day review period. LRAPA requested and EPA agreed to an expedited review because no comments requiring change to the permit were received from the public and no substantive changes were made. The public has 105 days (45-days EPA review period plus 60 days) from the date the proposed permit was sent to EPA to appeal the permit with EPA.

SLL/cmw
12/10/08

Hazardous Air Pollutant Emission Estimates

| Pollutant | Emissions Unit ID or Activity | Annual Production/Process Rates | | Emissions Factor | | Reference | Emissions (tons/yr) |
|------------------------------|--|---------------------------------|---------------|------------------|---------------|---|---------------------|
| | | Rate | Units | Rate | Units | | |
| Acrolein | EU-01, Boilers | 760,933 | M Lb steam/yr | 0.00440 | Lb/M Lb Steam | DEQ AQQP-010, general permit page #24. | 1.674 |
| | EU-06, Veneer Dryers, heated section - Controlled by boiler (EU-01) with a control efficiency of 90% | 172,800 | MSE3/8/yr | 0.00100 | Lb/M3/8 | References AP-42; 9/03. | |
| | EU-05B, Ply Presses | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | |
| | EU-05B, Ply Trim Chipper | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-05B, Ply Skimmer Saw | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-06, Veneer Dryers cooling section | 172,800 | MSE3/8/yr | 0.00800 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | |
| | EU-07 Steam Vats | 225,000 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-08, Lumber Kilns | 232,200 | MBF/yr | 0.00240 | Lb/MBF | OSU small scale test, Rosboro samples, 01/07. | |
| Total Acrolein | | | | | | 2.7 | |
| Phenol | EU-01, Boilers | 928,338 | MMBtu/yr | 0.00005 | lb/MMBtu | AP-42 Table 1.6-3 | 0.024 |
| | EU-06, Veneer Dryers, heated section - Controlled by boiler (EU-01) with a control efficiency of 90% | 172,800 | MSE3/8/yr | 0.00300 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | |
| | EU-05B, Ply Presses | 145,800 | MSE3/8/yr | 0.00600 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | |
| | EU-05B, Ply Trim Chipper | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-05B, Ply Skimmer Saw | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-06, Veneer Dryers cooling section | 172,800 | MSE3/8/yr | 0.00030 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | |
| | EU-07 Steam Vats | 225,000 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-08, Lumber Kilns | 232,200 | MBF/yr | BDL | Lb/MBF | AP-42 BDL | |
| Total Phenol | | | | | | 0.5 | |
| Propionaldehyde | EU-01, Boilers | 928,338 | MMBtu/yr | 0.00006 | lb/MMBtu | AP-42 Table 1.6-3 | 0.028 |
| | EU-06, Veneer Dryers, heated section - Controlled by boiler (EU-01) with a control efficiency of 90% | 172,800 | MSE3/8/yr | 0.00440 | Lb/M3/8 | Rosboro source test, 02/03 dryer exhaust inlet. | |
| | EU-05B, Ply Presses | 145,800 | MSE3/8/yr | 0.00300 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | |
| | EU-05B, Ply Trim Chipper | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-05B, Ply Skimmer Saw | 145,800 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-06, Veneer Dryers cooling section | 172,800 | MSE3/8/yr | 0.00200 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | |
| | EU-07 Steam Vats | 225,000 | MSE3/8/yr | BDL | Lb/M3/8 | AP-42 BDL | |
| | EU-08, Lumber Kilns | 232,200 | MBF/yr | 0.00100 | Lb/MBF | OSU small scale test, Rosboro samples, 01/07. | |
| Total Propionaldehyde | | | | | | 0.6 | |

Hazardous Air Pollutant Emission Estimates

| Pollutant | Emissions Unit ID or Activity | Annual Production/Process Rates | | Emissions Factor | | Reference | Emissions (tons/yr) | |
|--------------------------------------|--|--|---------------|------------------|--------------|--|--|-------|
| | | Rate | Units | Rate | Units | | | |
| Methanol | EU-01, Boilers | 760,933 | M Lb steam/yr | 0.00269 | Lb/Mlb Steam | Rosboro source test, 07/02, with veneer dryer exhaust as combustion air. | 1.023 | |
| | EU-05B, Ply Presses | 145,800 | MSF3/8/yr | 0.04000 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 2.916 | |
| | EU-05B, Ply Trim Chipper | 145,800 | MSF3/8/yr | 0.00800 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.583 | |
| | EU-05B, Ply Skinner Saw | 145,800 | MSF3/8/yr | 0.01200 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.875 | |
| | EU-05B, Lam Press - Face Resin | 1,492,957 | lbs/yr | 0.00257 | lb/lb | Borden caul plate testing 2004 | 1.918 | |
| | EU-05B, Lam Press - Finger Joint Resin | 283,405 | lbs/yr | 0.01312 | lb/lb | Vaughn facility | 1.859 | |
| | EU-06, Veneer Dryers cooling section | 172,800 | MSF3/8/yr | 0.00500 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | 0.432 | |
| | EU-07 Steam Vats | 225,000 | MSF3/8/yr | 0.00700 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.788 | |
| Total Methanol | EU-08, Lumber Kilns | 232,200 | MBF/yr | 0.07700 | Lb/MBF | OSU small scale test, Rosboro samples, 01/07. | 8.940 | |
| | | | | | | | 19.3 | |
| | Formaldehyde | EU-01, Boilers | 760,933 | M Lb steam/yr | 0.00309 | Lb/Mlb Steam | Rosboro source test, 12/06, with veneer dryer exhaust as combustion air. | 1.175 |
| | | EU-05B, Ply Presses | 145,800 | MSF3/8/yr | 0.00200 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.146 |
| | | EU-05B, Ply Trim Chipper | 145,800 | MSF3/8/yr | BDL | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.000 |
| | | EU-05B, Ply Skinner Saw | 145,800 | MSF3/8/yr | 0.00030 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.022 |
| | | EU-05B, Lam Press - Face Resin | 1,492,957 | lbs/yr | 0.00065 | lb/lb | Borden caul plate testing 2004 | 0.485 |
| | | EU-05B, Lam Press - Finger Joint Resin | 283,405 | lbs/yr | 0.00008 | lb/lb | Vaughn facility | 0.011 |
| EU-06, Veneer Dryers cooling section | | 172,800 | MSF3/8/yr | 0.00200 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | 0.173 | |
| EU-07 Steam Vats | | 225,000 | MSF3/8/yr | BDL | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.000 | |
| Total Formaldehyde | EU-08, Lumber Kilns | 232,200 | MBF/yr | 0.00190 | Lb/MBF | OSU small scale test, Rosboro samples, 01/07. | 0.221 | |
| | | | | | | | 2.2 | |
| | Acetaldehyde | EU-01, Boilers | 760,933 | M Lb steam/yr | 0.00286 | Lb/Mlb Steam | Rosboro source test, 12/06, with veneer dryer exhaust as combustion air. | 1.086 |
| | | EU-05B, Ply Presses | 145,800 | MSF3/8/yr | 0.00700 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.510 |
| | | EU-05B, Ply Trim Chipper | 145,800 | MSF3/8/yr | BDL | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.000 |
| | | EU-05B, Ply Skinner Saw | 145,800 | MSF3/8/yr | 0.00090 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.066 |
| | | EU-06, Veneer Dryers cooling section | 172,800 | MSF3/8/yr | 0.00400 | Lb/M3/8 | DEQ AQQP-010, general permit page #28. | 0.346 |
| | | EU-07 Steam Vats | 225,000 | MSF3/8/yr | 0.00500 | Lb/M3/8 | DEQ AQQP-010, general permit page #29. | 0.563 |
| EU-08, Lumber Kilns | | 232,200 | MBF/yr | 0.13300 | Lb/MBF | OSU small scale test, Rosboro samples, 01/07. | 15.441 | |
| | | | | | | | 18.0 | |