STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

Robbins Lumber, Inc. **Waldo County** **Searsmont, Maine** **A-156-77-2-A**	**Departmental** **Findings of Fact and Order** **New Source Review** **NSR #2**

FINDINGS OF FACT

After review of the air emission New Source Review license application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Robbins Lumber, Inc. (Robbins Lumber)
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	321912, 321113, 321999
NATURE OF BUSINESS	Lumber Manufacturing
FACILITY LOCATION	Ghent Road, Searsmont, Maine

B. NSR License Description

Robbins Lumber produces lumber from logs. The processes include debarking, sawing, edging, drying, and planing. The facility is considered an existing Part 70 Major Source as defined in *Definitions Regulations*, 06-096 CMR ch. 100 (as amended) and currently operates under the Part 70 license A-156-70-D-R (August 11, 2015). Equipment included on the license includes two wood-fired boilers, a diesel generator, drying kilns, process cyclones, and minor volatile organic compound (VOC) sources.

Robbins Lumber has submitted an NSR minor modification application to replace 3 existing package-loaded lumber kilns with one track-loaded lumber kiln. The new kiln will be installed in a different building on the property. Robbins Lumber will not be increasing its lumber kiln capacity or the associated emissions.

C. Emission Equipment

The following equipment is addressed in this NSR license:

Process Equipment

Equipment	Production Rate
*3 Package Loaded Kilns	40 MMBF/year
1 Track Loaded Kiln	40 MMBF/year

*To be shut down and removed once the track loaded kiln is operational.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application for Robbins Lumber does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The modification of a major source is considered a major or minor modification based on whether or not expected emissions increases exceed the "Significant Emission Increase" levels as given in *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100.

The emission increases are determined by subtracting the baseline actual emissions of the 24 months preceding the modification (or representative 24 months) from the projected actual emissions.

Kiln Annual Baseline Determination

Description	**Kiln Throughput (MMBF)**	**VOC (tons per year)**
2014 VOC Emissions	27.1	30.7
2015 VOC Emissions	28.2	31.8
Average Annual Baseline	27.7	31.3

The results of this comparison are as follows:

Pollutant	Baseline Actual Emissions 2014 & 2015 (ton/year)	Projected Actual Emissions (ton/year)	Net Emissions Increase (ton/year)	Significant Emissions Increase Levels (ton/year)
VOC	31.3	31.3	0	40

Note: The above values are for the drying kilns only. None of the other equipment at the facility is affected by this NSR license.

Since the kiln throughput will remain the same and there is no expected VOC increase, this NSR license is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations,* 06-096 C.M.R. ch. 115 since the changes being made are not addressed or prohibited in the Part 70 air emission license. An application to incorporate the requirements of this NSR license into the Part 70 air emission license shall be submitted no later than 12 months from commencement of the requested operation.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Lumber Drying Kiln Replacement

1. Project Description

Robbins Lumber is proposing to replace a building that currently contains three drying kiln bays. One new kiln similar in total capacity will replace the existing kilns and be housed in another building. The new kiln is capable of processing approximately 150,000 board feet per week (BF/wk) of lumber, equivalent to 7.8 MMBF/yr, which represents approximately 20% of Robbins Lumber's licensed wood drying capacity. Robbins Lumber is limited to 40

MMBF/yr of kiln throughput and is proposing to maintain the limit after the kiln replacement, resulting in no change to its licensed limit.

2. BACT Analysis

The kiln has the potential to emit one criteria air pollutant, volatile organic compounds (VOCs). The options for controlling VOC available for lumber drying kilns of this size are listed in the table below by order of effectiveness and are described in greater detail in the following subsections.

Potential Control Technologies for VOC Emissions from Kilns

Pollutant	Control Technology
VOC	1. Thermal Destruction 2. Scrubbing systems (ie carbon or biofilters) 3. Condensation

VOC emissions result from the release of naturally occurring VOCs inherent in the wood. The kiln will be heated with steam from the Robbins Lumber's biomass boilers. During heating, the lumber releases VOCs along with water as part of the drying process. The VOCs and water vapor released from the wood are exhausted through 32 exterior kiln vents. The exhaust is a high-volume, extremely low concentration VOC-laden air stream. The replacement kiln can process about 150,000 BF/wk, equivalent to 7.8 MMBF/yr, which represents about 20% of Robbins Lumber's licensed capacity. Using the generally accepted NCASI emission factor for kiln drying white pine of 2.26 lb VOC per thousand board feet, the proposed kiln has the potential to emit (PTE) 8.8 TPY of VOCs.[1]

The available control technologies were reviewed and are not considered practical or economically feasible because of the high moisture content and the extremely low concentration of VOCs in the exhaust stream.

Thermal destruction (i.e., thermal oxidizers such as regenerative thermal oxidizers, catalytic oxidizers, or direct thermal incinerators) is an add-on air pollution control technique that decomposes VOC-laden gases at a high temperature. Thermal destruction is most effective for air streams containing high concentrations of VOC. However, air streams with low VOC concentrations require significant supplemental fuel. The Robbins Lumber kiln exhaust stream has a low VOC concentration and high moisture content, thus thermal destruction is not a practical or economically feasible option for this application.

[1] NCASI *Emissions From Lumber Drying*, Technical Bulletin 718 (07/1996)

Scrubbers are add-on pollution control devices that capture and remove pollutants from exhaust streams. Examples include carbon adsorption scrubbers, where exhaust is contacted with an adsorbent media (typically activated carbon) to remove VOCs from the exhaust stream, and biofilters, where VOC-laden air passes through media containing microbes that break down the VOCs. High moisture, temperature sensitivity, a cold winter environment, and the extremely low concentration of VOCs make scrubbing technologies impractical and cost-prohibitive for this application.

Condensation technology is designed to separate and collect VOCs in an air stream through phase changes. Because of the extremely low concentration of VOCs in the gases and high energy demand, this is not a practical option.

Summary
Add-on VOC emission controls are not practical or economically feasible, due to the high number and location of exhaust vents, the high moisture content and the extremely low VOC concentration of the exhaust stream. The Federal RACT/BACT/LAER Clearinghouse (RBLC) database and findings for all other lumber drying kilns in Maine indicate that BACT for the drying kiln is no add-on control.

The existing kilns at the facility have no VOC emissions control.

3. Department Determination
   The Department has determined that BACT for the new drying kiln is no additional VOC emissions control.

C. Incorporation Into the Part 70 Air Emission License

The requirements in this 06-096 C.M.R. ch. 115 New Source Review license shall apply to the facility upon issuance. Per *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a modification at the facility that has undergone NSR requirements or been processed through 06-096 C.M.R. ch. 115, the source must apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants New Source Review License A-156-77-2-A pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific condition below.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

Robbins Lumber will continue to be subject to its existing license A-156-70-D-R including the requirements in SPECIFIC CONDITIONS (16) Drying Kilns. It will continue to be subject to A-156-77-1-M.

SPECIFIC CONDITIONS

(1) Robbins Lumber shall submit an application to incorporate this NSR license into the facility's Part 70 air emission license no later than 12 months from commencement of the requested operation. [06-096 C.M.R. ch. 140 § 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 8 DAY OF November , 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
PAUL MERCER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 10/18/2016
Date of application acceptance: 10/18/2016

Date filed with the Board of Environmental Protection:

Filed
NOV 08 2016
State of Maine
Board of Environmental Protection

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.