



DEPARTMENT ORDER

**Stratton Lumber, Inc.
Franklin County
Stratton, Maine
A-9-71-Q-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #2**

FINDINGS OF FACT

After review of the air emission license amendment 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 (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Stratton Lumber, Inc. (Stratton) was issued Air Emission License A-9-71-O-R on March 24, 2014 for the operation of emission sources associated with their dimensional lumber mill. The license was subsequently amended on September 23, 2016 (A-9-71-P-A).

In order to increase drying efficiency, Stratton has requested an amendment to their existing Air Emission License to convert one of its existing drying kilns (designated Kiln #3) from a 'batch' kiln to a 'continuous' kiln. Due to the anticipated increased drying efficiency, Stratton is proposing to increase their annual throughput limit of lumber in the three lumber drying kilns from 90 million board feet per year (MMBF/year) to a facility-wide total of 150 MMBF/year, with 75 MMBF/year of the total available for drying fir species.

The equipment addressed in this license amendment is located at 66 Fontaine Road in Stratton, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Process Equipment

Equipment	Maximum Rate	Stack
Kiln #3	Variable, species dependent	Fugitive

C. 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 modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emission” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100.

Stratton’s emission increases were determined by subtracting the baseline actual annual emissions from the twenty-four month period January 2015 – December 2016 from the proposed licensed annual emissions. The results of this comparison are as follows:

Pollutant	2015-2016 Baseline Actual Emissions (TPY)	Proposed Annual Emissions (TPY)	Net Emissions Change (TPY)	Significant Emission Levels (TPY)
PM	11.1	27.0	15.9	100
PM ₁₀	11.1	27.0	15.9	100
SO ₂	1.2	1.9	0.7	100
NO _x	12.1	22.5	10.4	100
CO	33.3	99.8	66.5	100
VOC	32.2	81.2	49.0	50
CO ₂ e	<100,000	<100,000	<100,000	100,000

The application for Stratton for the Kiln #3 conversion project is considered to be a minor modification. Therefore, this application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

In the amendment application, Stratton documented total projected annual VOC emissions increases as a result of this project from both modified equipment and affected equipment at the level represented in the table above. This value was based on a facility-wide kiln throughput limit of spruce and fir for the three kilns of 150 MMBF/year, with up to 75 MMBF/year of the 150 MMBF/year being available for drying fir. Emissions increases from the LPG and biomass boilers were also accounted for in the total projected emissions increases by subtracting the 2015/2016 baseline emissions from the boilers’ maximum potential annual emissions. Stratton shall maintain records of the annual throughput of each kiln, the species being dried and resulting VOC emissions to document compliance with the throughput limit which will demonstrate that this project does not constitute a major modification.

Prior to the proposed Kiln #3 conversion, because of existing annual fuel and throughput limits placed on Boilers #1, #2 and the kilns, Stratton was previously categorized as a

stationary minor source for criteria pollutants and was licensed under air emission license A-9-71-O-R (issued March 24, 2014) and amendment A-9-71-P-A (issued September 23, 2016).

Due to the VOC emissions increase associated with the Kiln #3 conversion, Stratton will be considered a major source upon issuance of this air emission license amendment. Therefore, Stratton shall apply for a Part 70 license under *Part 70 Air Emission License Regulation*, 06-096 C.M.R. ch. 140 § 3 within twelve months of commencing operation, as provided in 40 C.F.R. Part 70.5.

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.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 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. Process Description

In order to increase drying efficiency, Stratton is proposing to convert one of its existing drying kilns (Kiln #3) from a 'batch' kiln to a 'continuous' kiln, where lumber is continuously fed into and out of the kiln.

The overall length of Kiln #3 will be increased, to allow for an increase in the length of the drying chamber, and for the addition of conditioning chambers on each end of the existing structure, which will allow for the exchange of heat. The efficiency of the kiln will be increased by allowing the cold, green lumber to be pre-heated by the hot, dry lumber as they pass each other when traveling into and out of the drying chambers.

Green lumber will move through the kiln at a programmed rate; the rate being dependent on the wood species.

Due to the increased drying efficiency described above, Stratton is proposing to increase their annual throughput limit of spruce and fir species from 90 million board feet per year (MMBF/year) to a facility-wide total of 150 MMBF/year, with 75 MMBF/year available for drying fir species.

C. Kiln #3

1. Best Available Control Technology (BACT)

The only emission unit being modified as part of this project is Kiln #3, and the only pollutant expected from the unit is VOCs. Thus a BACT analysis was provided only for VOC emissions from Kiln #3.

Potential control technologies for VOC emissions from lumber kilns include carbon adsorption, absorption/scrubbing systems, condensation, biofiltration, catalytic oxidation and thermal oxidation. Selection of a control technology is made on the basis of stream-specific characteristics (such as flow rate, hydrocarbon concentration, temperature, and moisture content), economic costs, energy consumption, total source emissions and regional environmental impacts.

Given the nature of the exhaust points on each kiln, varied kiln flow rates, high moisture content of the exhaust stream, low VOC concentration of the exhaust stream, the variety of VOCs expected in the exhaust stream, and the relatively small quantity of VOC emissions from the source, all of the control technologies listed above are either technically or economically infeasible for Kiln #3.

The Department finds that BACT for Kiln #3 does not require any add-on control equipment and shall consist of good kiln operating and maintenance practices.

2. Periodic Monitoring

Periodic monitoring for all Stratton kilns shall consist of a record of all wood drying operations. Records documenting compliance shall include the kiln throughput and the VOC emission factor used for each specific species of wood dried. Records shall be maintained on a monthly and twelve-month rolling-total basis.

VOC emissions from Stratton's three kilns were calculated using a total maximum production of 150 MMBF/year with 75 MMBF/year of the total being fir species,

The following emission factor shall be used to calculate VOC emissions from the drying kilns: 0.77 lb/1,000 board feet (MBF) for spruce and 1.14 lb/MBF for fir. Emissions factors were obtained from a University of Maine study published in June 1997.

Stratton shall be limited to the drying of no more than 150 MMBF/year, based on a twelve-month rolling-total basis. Of the 150 MMBF/year total, Stratton shall not dry more than 75 MMBF/year of fir species.

D. Annual Emissions

1. Total Annual Emissions

Stratton shall be restricted to the following annual emissions, on a twelve-month rolling-total basis:

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

Equipment	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boiler #1 - Biomass	26.6	26.6	1.8	19.5	88.7	8.9
Boiler #2 - LPG	0.4	0.4	0.1	3.0	11.1	0.7
Drying Kilns	-	-	-	-	-	71.6
Total TPY	27.0	27.0	1.9	22.5	99.8	81.2

The tons per year limits were calculated based on a maximum annual heat input of 177,390 MMBtu/year for Boiler #1, 8,760 hours of operation for Boiler #2 and a maximum licensed throughput of 150 MMBF/year for the Drying Kilns (with 75 MMBF/year of the total 150 MMBF/year throughput being designated for fir species).

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100, are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

The quantity of CO₂e emissions from this facility is less than 100,000 tons per year, based on the following:

- the types of fuel being fired;
- the facility's fuel use limit;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

No additional licensing actions to address GHG emissions are required at this time.

III. AMBIENT AIR QUALITY ANALYSIS

Stratton previously submitted an ambient air quality impact analysis for air emission license A-9-71-G-A/R (dated September 8, 1997) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate National Ambient Air Quality Standards (NAAQS).

Since there are no proposed increases in short-term or annual emissions from the boilers and VOC emissions are not evaluated as part of an air quality impact analysis, an updated air quality impact analysis is not required as part of this amendment.

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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-9-71-Q-A subject to the conditions found in license A-9-71-O-R, in amendment A-9-71-P-A, and the following conditions.

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

SPECIFIC CONDITIONS

This condition shall replace Condition (17) in Air Emission License A-9-71-O-R:

(17) **Drying Kilns**

- A. Stratton shall be limited to drying a total of 150.0 MMBF/yr of spruce and fir combined, on a twelve-month rolling total basis. [06-096 C.M.R. ch. 115, BACT]
- B. Stratton shall be limited to drying no more than 75.0 MMBF/yr of fir, on a twelve-month rolling total basis. [06-096 C.M.R. ch. 115, BACT]

- C. Stratton shall maintain records of wood drying. Records shall include quantity of wood dried, indicating the specific species of wood dried. Records shall be maintained on a monthly and twelve-month rolling-total basis. [06-096 C.M.R. ch. 115, BACT]
- D. Prior to drying any other species of wood in the kilns, Stratton shall contact the Department to assess whether any modifications need to be made to this air emission license. [06-096 C.M.R. ch. 115, BACT]

The following is a new condition in addition to those in air emissions license A-9-71-O-R and in amendment A-9-71-P-A.

- (24) Stratton shall apply for a Part 70 license within twelve months of commencing operation under the proposed scenario, as provided in 40 C.F.R. Part 70.5. [06-096 C.M.R. ch. 140, § 3]

DONE AND DATED IN AUGUSTA, MAINE THIS 28 DAY OF June, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Corne for
PAUL MERCER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-9-71-O-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: May 15, 2017

Date of application acceptance: May 18, 2017

Date filed with the Board of Environmental Protection:

This Order prepared by Kevin J Ostrowski, Bureau of Air Quality.

