



DEPARTMENT ORDER

**L.L. Bean, Inc.
Desert Road Campus
Cumberland County
Freeport, Maine
A-764-71-I-M**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

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

L.L. Bean, Inc. (LLB) was issued Air Emission License A-764-71-H-R/A on March 23, 2017, for the operation of emission sources associated with their Desert Road Campus facility.

LLB has requested a minor revision to their license in order to replace a failed boiler with one of comparable size that fires the same fuel.

The equipment addressed in this license amendment is located on Desert Road in Freeport, Maine.

B. Emission Equipment

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

Boiler to be Removed

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scfh)	Fuel Type	Date of Manuf.	Date of Install.	Stack #
DRS-BLR #2 (old)	2.51	2,500	Natural Gas	1992	1992	DRS-BLR #2

Boiler to be Installed

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scfh)	Fuel Type	Date of Manuf.	Date of Install.	Stack #
DRS-BLR #2 (new)	3.00	3,000	Natural Gas	2018	2018	DRS-BLR #2

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.

This amendment factors in the contributions of a slightly larger boiler than the one it replaces. Emissions will be increased by less than 4 ton/year for each single pollutant, not including greenhouse gases (GHG), and less than 8 ton/year for all pollutants combined, not including GHG. Therefore, this modification is determined to be a minor revision and has been processed as such.

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)
PM	5.7	5.7	0.0
PM ₁₀	5.7	5.7	0.0
SO ₂	0.1	0.1	0.0
NO _x	20.8	21.0	0.2
CO	11.0	11.1	0.1
VOC	1.4	1.4	0.0

This modification is determined to be a minor modification and has been processed as such.

D. Facility Classification

With the boilers operating at their maximum potential to emit and the operating hours restriction on the seasonal generators, the emergency generator, and the fire pump the facility is licensed as follows:

- As a synthetic minor source of air emissions, because the licensed emissions are below the major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

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.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boiler DRS-BLR #2 (new)

In the fall of 2018, LLB experienced a failure of their DRS-BLR #2 boiler that fired natural gas, had a rated heat input capacity of 2.51 MMBtu/hr, and was originally installed in 1992. LLB has requested to replace this non-functioning boiler with a new more efficient one, having a rated heat input capacity of 3.0 MMBtu/hr, and also firing natural gas. LLB has requested that the new boiler keep the same equipment designation as the old one.

1. BACT Findings for DRS-BLS #2

a. Particulate Matter: PM / PM₁₀

Particulate matter emissions from natural gas-fired boilers of this size are generally controlled through their proper operation and maintenance and by using good combustion practices. The Department finds that BACT for PM / PM₁₀ emissions from the new boiler DRS-BLR #2 shall be the firing of natural gas, the use of good combustion practices, and the proper operation and maintenance of the boiler.

b. Sulfur Dioxide: SO₂

SO₂ emissions from boilers are directly related to the quantity of the fuel being fired and its sulfur content. DRS-BLR #2 will fire natural gas exclusively, which is inherently low in sulfur content. Therefore, the BACT for SO₂ for this boiler is to only fire natural gas and to properly operate and maintain the unit.

c. Nitrogen Oxides: NO_x

Potentially available control options for reducing NO_x emissions from natural gas-fired boilers include low NO_x burners, selective catalytic reduction (SCR), and non-selective catalytic reduction (NSCR). Combustion controls such as flue gas recirculation and the utilization of low NO_x burners can be integrated in the design of the boiler features, while SCR and NSCR are add-ons that can require significant investment and space for installation.

Boiler DRS-BLR #2 is listed by the manufacturer as a high efficiency, low emission unit. The size of the new boiler, combined with the minimal reduction in NO_x emissions that would be realized from the use of add-on controls makes their installation economically infeasible. Therefore, the Department finds that BACT for NO_x emissions from this boiler shall be its proper operation and maintenance in accordance with the manufacturer's written instructions.

d. Carbon Monoxide and Volatile Organic Compounds: CO and VOC

CO and VOC emissions result from incomplete fuel combustion, caused by conditions such as insufficient residence time or limited oxygen availability in the boiler. CO and VOC emissions from natural gas-fired boilers of this size are generally managed through good combustion controls and proper operation and maintenance of the units.

The BACT emission limits for Boiler DRS-BLR #2 were based on the following:

Natural Gas

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO₂ – 0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- NO_x – 100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
- CO – 84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
- VOC – 5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the boiler are the following:

Boiler	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
DRS-BLR #2 Natural Gas 3.0 MMBtu/hr	0.15	0.15	0.01	0.30	0.25	0.02

Visible emissions from the boiler shall not exceed 10% opacity on a six-minute block average basis.

2. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to the size of boiler DRS-BLR #2, it is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

3. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJ

Gas-fired boilers are exempt from 40 C.F.R. Part 63, Subpart JJJJJ. Therefore, boiler DRS-BLR #2 is not subject to the requirements of this standard. [40 C.F.R. § 63.11195(e)]

C. Annual Emissions

1. Total Annual Emissions

LLB shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits for the boilers were calculated based on their annual maximum potential to emit. The tons per year limits for the emergency generators and fire pump were based on an operating hour limit of 100 hours per year for each of the permanently installed emergency engines and an operating hour limit of 100 hours per year for each of the seasonal generators.

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
All Boilers Natural Gas	5.35	5.35	0.06	10.62	8.92	0.58
Generators Natural Gas	0.01	0.01	0.01	0.20	0.03	0.01
Generator and Fire Pump Distillate Fuel, Exempt from Subpart IIII	0.04	0.04	0.01	1.11	0.24	0.09
Seasonal Generators Distillate Fuel, Subject to Subpart IIII	0.25	0.25	0.01	9.04	1.95	0.72
Total TPY	5.7	5.7	0.1	21.0	11.1	1.4

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

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 operating hour restrictions on the emergency generators and fire pump;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting*, 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. Part 98.

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

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM ₁₀	25
SO ₂	50
NO _x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

L.L. Bean, Inc.
Desert Road Campus
Cumberland County
Freeport, Maine
A-764-71-I-M

7

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

ORDER

Based on the above Findings and subject to the Specific 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 Amendment A-764-71-I-M subject to the conditions found in Air Emission License A-764-71-H-R/A and the following Specific 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

The following condition shall replace Condition (16)(C) of Air Emission License A-764-71-H-R/A dated March 23, 2017.

(16) Boilers

OFC-ARU #1, OFC-ARU #2, OFC-ARU #5, OFC-ARU #9, OFC-ARU #10, OFC-ARU #11, OFC-ARU #12, OFC/S ARU #1, OFC/S-ARU #2, DRS-BLR #1 and DRS-BLR #2 (new)

C. Emissions from the boilers shall not exceed the following: [06-096 C.M.R. ch. 115, BPT]

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
OFC-ARU #1	0.12	0.12	0.01	0.24	0.20	0.01
OFC-ARU #2	0.06	0.06	0.01	0.12	0.10	0.01
OFC-ARU #5	0.09	0.09	0.01	0.18	0.15	0.01
OFC-ARU #9	0.09	0.09	0.01	0.18	0.15	0.01
OFC-ARU #10	0.09	0.09	0.01	0.18	0.15	0.01
OFC-ARU #11	0.09	0.09	0.01	0.18	0.15	0.01

L.L. Bean, Inc.
Desert Road Campus
Cumberland County
Freeport, Maine
A-764-71-I-M

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

8

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
OFC-ARU #12	0.09	0.09	0.01	0.18	0.15	0.01
OFC/S-ARU #1	0.12	0.12	0.01	0.24	0.20	0.01
OFC/S-ARU #2	0.19	0.19	0.01	0.38	0.32	0.02
DRS-BLR #1	0.13	0.13	0.01	0.25	0.21	0.01
DRS-BLR #2 (new)	0.15	0.15	0.01	0.30	0.25	0.02

DONE AND DATED IN AUGUSTA, MAINE THIS 8 DAY OF February, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cane for
GERALD D. REID, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-764-71-H-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: November 14, 2018
Date of application acceptance: November 15, 2018

Date filed with the Board of Environmental Protection:

This Order prepared by Patric J. Sherman, Bureau of Air Quality.

