



DEPARTMENT ORDER

**IDEXX Laboratories, Inc.  
Cumberland County  
Westbrook, Maine  
A-572-71-K-A (SM)**

**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**

IDEXX Laboratories, Inc. (IDEXX) was issued Air Emission License A-572-71-J-R on May 22, 2015, for the operation of emission sources associated with their diagnostic test kit manufacturing facility.

IDEXX has requested an amendment to their license in order to add a low-pressure fire tube boiler to be used for backup purposes if needed.

The equipment addressed in this license amendment is located at One IDEXX Drive, Westbrook, Maine.

**B. Emission Equipment**

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

**Boilers**

<u>Equipment</u>	<u>Max. Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>	<u>Date of Install.</u>	<u>Stack #</u>
Boiler #8	5.0	4,902 scf/hr	Natural Gas	2017	2018	8

**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 Emissions” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100.

This modification does not change the annual emissions from the facility, and is therefore determined to be a minor modification and has been processed as such.

## **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. Boiler #8**

IDEXX proposes to install Boiler #8 for backup steam and heat. The boiler is rated at 5.0 MMBtu/hr and fires natural gas. The boiler will be installed in 2018 and will exhaust through its own stack, designated Stack #8.

#### **1. BACT Findings**

The following is a summary of the BACT determination for Boiler #8.

##### **a. Particulate Matter (PM & PM<sub>10</sub>) and Sulfur Dioxide (SO<sub>2</sub>)**

The emissions of PM/PM<sub>10</sub> and SO<sub>2</sub> from combustion of natural gas in units with high combustion efficiency are inherently low due to the low ash content and negligible sulfur content of natural gas. Additional controls to reduce emissions of PM/PM<sub>10</sub> and SO<sub>2</sub> below proposed levels would not be economically practical given the small size (5.0 MMBtu/hr) of the unit. The Department finds good combustion controls and the firing of natural gas to constitute BACT for PM/PM<sub>10</sub> and SO<sub>2</sub> emissions from Boiler #8.

- b. Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC)

Emissions of NO<sub>x</sub>, CO, and VOC from small natural gas-fired boilers are typically controlled through combustion controls; specifically by maintaining proper air-to-fuel ratios and optimal combustion conditions. The use of appropriate combustion controls along with proper operation and maintenance are generally sufficient to control emissions to acceptable levels. The use of add-on NO<sub>x</sub> emissions control equipment such as selective catalytic reduction systems and selective non-catalytic reduction systems are not cost-effective for this unit given the already low emission levels achieved by small, gas-fired boilers of this size. Similarly, the use of CO and VOC emissions control equipment such as oxidation catalysts are not economically practical for boilers of this size. The Department finds that good combustion controls constitute BACT for NO<sub>x</sub>, CO, and VOC.

The BACT emission limits for the boiler were based on the following:

Natural Gas

- PM/PM<sub>10</sub> – 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO<sub>2</sub> – 0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- NO<sub>x</sub> – 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:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>
Boiler #8	PM	0.05

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM<sub>10</sub></u> <u>(lb/hr)</u>	<u>SO<sub>2</sub></u> <u>(lb/hr)</u>	<u>NO<sub>x</sub></u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Boiler #8 Natural Gas	0.25	0.25	0.01	0.49	0.41	0.03

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

The quantity of natural gas fired in Boiler #8 shall be included in the fuel use cap for Boilers #3, #6, and #7 as currently licensed, limited to 150,000,000 scf of natural gas on a 12-month rolling total basis.

2. Periodic Monitoring

Periodic monitoring for the boiler shall include recordkeeping to document fuel use both on a monthly and 12-month rolling total basis.

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

Due to the size, the boiler 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]

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

Boiler #8 is a gas-fired boiler, as defined in 40 C.F.R. § 63.11237, that is located at or is part of an area source of HAP, as defined in § 63.2. As such, this unit is not subject to *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ. [40 C.F.R. § 63.11195(e)]

C. Annual Emissions

This amendment does not change the annual emissions from this facility, since the tons per year limits were calculated based on a combined total of 150,000,000 scf/yr of natural gas firing in the boilers, and 100 hrs/yr of operation for the generators and fire pump engine.

**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 Amendment A-572-71-K-A subject to the conditions found in Air Emission License A-572-71-J-R, 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.

**The following shall replace Condition (16) of Air Emission License A-572-71-J-R:**

**(16) Boilers #3, #6, #7, and #8**

**A. Fuel**

1. Total fuel use for Boilers #3, #6, #7, and #8 shall not exceed 150,000,000 scf/yr of natural gas, based on a 12-month rolling total basis. [06-096 C.M.R. ch. 115, BPT/BACT]
2. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of the fuel delivered (if applicable). Records of annual fuel use shall be kept on a monthly and 12-month rolling total basis. [06-096 C.M.R. ch. 115, BPT/BACT]

**B. Emissions shall not exceed the following:**

<b>Unit</b>	<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>Origin and Authority</b>
Boiler #3, #6, #7, #8	PM	0.05	06-096 C.M.R. ch. 115, BPT/BACT

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

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Boiler #3 (6.3 MBtu/hr)	0.31	0.31	0.01	0.62	0.52	0.03
Boiler #6 (16.7 MMBtu/hr)	0.84	0.84	0.01	1.67	1.41	0.09
Boiler #7 (16.7 MMBtu/hr)	0.84	0.84	0.01	1.67	1.41	0.09
Boiler #8 (5.0 MMBtu/hr)	0.25	0.25	0.01	0.49	0.41	0.03

**D. Visible Emissions**

Visible emissions from Boiler #3, the combined stack serving Boilers #6 and #7, and Boiler #8 shall not exceed 10% opacity on a six-minute block average basis.  
[06-096 C.M.R. ch. 115, BPT/BACT]

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E. IDEXX shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boilers #6 and #7, including recording and maintaining records of the amount of fuel combusted during each calendar month. [40 C.F.R. § 60.48c (g)(2)]

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

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Paul Mercer*  
PAUL MERCER, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-572-71-J-R.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: November 6, 2017  
Date of application acceptance: November 14, 2017

Date filed with the Board of Environmental Protection:

This Order prepared by Benjamin Goundie, Bureau of Air Quality.

