



DEPARTMENT ORDER

**Bridgton Hospital  
Cumberland County  
Bridgton, Maine  
A-822-71-E-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**

Bridgton Hospital was issued Air Emission License A-822-71-D-R on May 17, 2018, for the operation of emission sources associated with their healthcare facility.

Bridgton Hospital has requested a minor revision to their license to add two new propane-fired boilers to their license.

The equipment addressed in this license amendment is located at 10 Hospital Drive, Bridgton, Maine.

**B. Emission Equipment**

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

**Boilers**

<b>Equipment</b>	<b>Max. Capacity (MMBtu/hr)</b>	<b>Maximum Firing Rate (scfh)</b>	<b>Fuel Type, % sulfur</b>	<b>Date of Manuf.</b>	<b>Date of Install.</b>	<b>Stack #</b>
Boiler #6	1.0	400	Propane, negl.	2017	2018	7
Boiler #7	1.0	400	Propane, negl.	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.

This amendment will increase emissions 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.

**D. Facility Classification**

The facility is licensed as follows:

- As a natural minor source of air emissions, because facility emissions cannot exceed 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.

**B. Boilers #6 and #7**

Bridgton Hospital operates Boilers #6 and #7 for facility heating and to produce hot water. The boilers are each rated at 1.0 MMBtu/hr and each fires propane gas. The boilers were installed in 2018 and each boiler exhausts through its own stack.

**1. BACT Findings for Boilers #6 and #7**

**a. Particulate Matter: PM / PM<sub>10</sub>**

Particulate matter emissions from propane-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 / PM<sub>10</sub> emissions from Boilers #6 and #7 shall be the firing of propane, the use of good combustion practices, and the proper operation and maintenance of the boiler.

**b. Sulfur Dioxide: SO<sub>2</sub>**

SO<sub>2</sub> emissions from boilers are directly related to the quantity of the fuel being fired and its sulfur content. Boilers #6 and #7 will fire propane exclusively, which is inherently low in sulfur content. Therefore, the BACT for SO<sub>2</sub> emissions from these boilers is to only fire propane in them and to properly operate and maintain the units.

**c. Nitrogen Oxides: NO<sub>x</sub>**

Potentially available control options for reducing NO<sub>x</sub> emissions from propane-fired boilers include low NO<sub>x</sub> burners, selective catalytic reduction (SCR), and non-selective catalytic reduction (NSCR). Combustion controls such as flue gas recirculation and the utilization of low NO<sub>x</sub> burners can be integrated in the design of the boiler features, while SCR and NSCR are add-on equipment that can require significant investment and space for installation.

The sizes of Boilers #6 and #7, combined with the minimal reduction in NO<sub>x</sub> emissions that would be realized from the use of add-on controls on these boilers, makes the installation of these controls economically infeasible. Therefore, the Department finds that BACT for NO<sub>x</sub> emissions from these boilers shall be their 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 boilers. CO and VOC emissions from propane-fired boilers of this size are generally managed through good combustion controls and proper operation and maintenance of the units.

The Department finds that operating and maintaining the new boilers in accordance with the manufacturer's recommended procedures, and the firing of propane exclusively in the new boilers constitute BACT for this installation.

**2. The BACT emission limits for each of the two boilers were based on the following:**

Propane

PM/PM <sub>10</sub>	– 0.08 lb/MMBtu, based on 06-096 C.M.R. ch. 115, BACT
SO <sub>2</sub>	– 0.1 lb/1000 gallons, based on AP-42 Table 1.4-2 dated 7/08
NO <sub>x</sub>	– 13 lb/1000 gallons, based on AP-42 Table 1.5-1 dated 7/08
CO	– 7.5 lb/1000 gallons, based on AP-42 Table 1.5-1 dated 7/08
VOC	– 1.0 lb/1000 gallons, based on AP-42 Table 1.5-1 dated 7/08
Visible Emissions	– 06-096 C.M.R. ch. 115, BACT

3. The BACT emission limits for the boilers are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #6 Propane	0.08	0.08	0.01	0.14	0.08	0.01
Boiler #7 Propane	0.08	0.08	0.01	0.14	0.08	0.01

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

4. Periodic Monitoring

Periodic monitoring for the boiler shall include recordkeeping to document the type of fuel fired in the new boilers.

5. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

Due to the sizes of Boilers #6 and #7, they are 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]

6. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*

Boilers #6 and #7 both fire propane and are therefore considered gas-fired boilers as defined in 40 C.F.R. Part 60, Subpart JJJJJ. Gas-fired boilers are exempt from Subpart JJJJJ. Therefore, Boilers #6 and #7 are not subject to the requirements of 40 C.F.R. Part 63, Subpart JJJJJ. [40 C.F.R. § 63.11195(e)]

C. Annual Emissions

1. Total Annual Emissions

Bridgton Hospital shall be restricted to the following annual emissions, based on calendar year totals. The tons per year limits below were calculated using the previously established emissions for existing equipment from Air Emission License A-822-71-D-R (dated May 17, 2018), and the emissions from Boilers #6 and #7, assuming they each operate for 8,760 hours per year at full capacity.

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

	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>
Boilers #4 and #5	1.68	1.68	10.58	6.30	0.76	0.06
Boilers #6 and #7	0.70	0.70	0.01	1.24	0.72	0.10
Generator #1	0.01	0.01	negl.	0.24	0.05	0.02
Generator #2	0.05	0.05	0.001	1.22	0.32	0.03
<b>Total TPY</b>	<b>2.4</b>	<b>2.4</b>	<b>10.6</b>	<b>9.0</b>	<b>1.9</b>	<b>0.2</b>

<b>Pollutant</b>	<b>Tons/year</b>
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 (CO<sub>2</sub>e).

The quantity of CO<sub>2</sub>e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility’s fuel use limits;
- 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:

<b>Pollutant</b>	<b>Tons/Year</b>
PM <sub>10</sub>	25
SO <sub>2</sub>	50
NO <sub>x</sub>	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.

### 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-822-71-E-M, subject to the conditions found in Air Emission License A-822-71-D-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.

**SPECIFIC CONDITIONS**

The following new Specific Condition (19) is being added to the existing air license A-822-71-D-R, dated May 17, 2018.

**(19) Boilers #6 and #7**

**A. Fuel**

1. Boilers #6 and #7 shall fire propane exclusively. [06-096 C.M.R. ch. 115, BACT]
2. Compliance shall be demonstrated by fuel records from the supplier showing the type of fuel delivered. 06-096 C.M.R. ch. 115, BACT]

**B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, 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 #6	0.08	0.08	0.01	0.14	0.08	0.01
Boiler #7	0.08	0.08	0.01	0.14	0.08	0.01

**C. Visible emissions from the boiler shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]**

DONE AND DATED IN AUGUSTA, MAINE THIS 24 DAY OF January, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Case for  
MELANIE LOYZIM, ACTING COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-822-71-D-R.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: December 10, 2018  
Date of application acceptance: December 17, 2018

Date filed with the Board of Environmental Protection:

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

