



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

**City of Portland
King Middle School
Cumberland County
Portland, Maine
A-417-71-I-R**

**Departmental
Findings of Fact and Order
Air Emission License
Renewal**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

The City of Portland has applied to renew their Air Emission License permitting the operation of emission sources associated with King Middle School.

The equipment addressed in this license is located at 92 Deering Ave, Portland, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type, % sulfur</u>	<u>Date of Manuf.</u>	<u>Stack #</u>
Boiler #1	8.4	8235 scf/hr 60 gal/hr	natural gas, negligible distillate fuel, 0.5%	2001	1
Boiler #2	8.4	8235 scf/hr 60 gal/hr	natural gas, negligible distillate fuel, 0.5%	2001	1

City of Portland also operates equipment, including a small portable generator, that are below the applicability threshold of 06-096 CMR 115 and are mentioned for completeness purposes only.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

C. Definitions

Distillate Fuel means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396, diesel fuel oil numbers 1 or 2, as defined in ASTM D975, kerosene, as defined in ASTM D3699, biodiesel as defined in ASTM D6751, or biodiesel blends as defined in ASTM D7467.

D. Application Classification

The application for City of Portland does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). The facility is not capable of emitting above major source thresholds for criteria pollutants and is considered a natural minor source. The facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of 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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

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. Boilers

City of Portland operates Boilers #1 and #2 for facility heating and hot water needs. Boilers #1 and #2 are each rated at 8.4 MMBtu/hr and were manufactured and installed in 2001. Both boilers have the ability to fire distillate fuel. However, in 2012 they were converted to fire natural gas and fire natural gas as their primary fuel. Boilers #1 and #2 exhaust through a combined stack (Stack #1).

1. BPT Findings

The BPT emission limits for the boilers were based on the following:

Natural Gas

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BPT
- 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
- Opacity – 06-096 CMR 115, BPT

Distillate Fuel

- PM/PM₁₀ – 0.08 lb/MMBtu based on 06-096 CMR 115, BPT
- SO₂ – based on firing distillate fuel with a sulfur content of 0.5% by weight
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10
- Opacity – 06-096 CMR 115, BPT

The BPT emission limits for the boilers are the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>
Boiler #1 <i>natural gas</i>	PM	0.05
Boiler #1 <i>distillate fuel</i>	PM	0.08
Boiler #2 <i>natural gas</i>	PM	0.05
Boiler #2 <i>distillate fuel</i>	PM	0.08

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler #1 <i>natural gas</i>	0.42	0.42	neg	0.82	0.69	0.05
Boiler #1 <i>distillate fuel</i>	0.67	0.67	4.23	1.20	0.30	0.02
Boiler #2 <i>natural gas</i>	0.42	0.42	neg	0.82	0.69	0.05
Boiler #2 <i>distillate fuel</i>	0.67	0.67	4.23	1.20	0.30	0.02

When only natural gas is being fired in Boilers #1 and #2, visible emissions from Stack #1 shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

When either Boiler #1 or Boiler #2 are firing distillate fuel, visible emissions from Stack #1 shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

Prior to July 1, 2016, or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired in the boilers shall have a maximum sulfur content of 0.5% by weight. Per 38 MRSA §603-A(2)(A)(3), beginning July 1, 2016, or on the date specified in the statute, the facility shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm), and beginning January 1, 2018, or on the date specified in the statute, the facility shall fire distillate fuel with a maximum sulfur content limit of 0.0015% by weight (15 ppm). The specific dates contained in this paragraph reflect the current dates in the statute as of the effective date of this license; however, if the statute is revised, the facility shall comply with the revised dates upon promulgation of the statute revision.

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document hours of operation of Boilers #1 and #2 when firing distillate fuel.

3. 40 CFR Part 60, Subpart Dc

Due to their size, Boilers #1 and #2 are not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

4. 40 CFR Part 63, Subpart JJJJJ

Gas-fired boilers are exempt from *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). However, boilers which fire fuel oil are not. A “gas-fired boiler” is defined as any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year. [40 CFR Part 63.11237]

City of Portland intends to operate Boilers #1 and #2 within the definition of a “gas-fired boiler” and is therefore exempt from the requirements of Subpart JJJJJ. If either

Boiler #1 or Boiler #2 fires distillate fuel beyond the limitations of the definition of a “gas-fired boiler”, it will become subject to Subpart JJJJJ as an existing boiler at the time it is converted back to oil. City of Portland shall not convert Boiler #1 or Boiler #2 to oil firing (beyond what is included in the definition of a “gas-fired boiler”) without first amending their license to address oil firing. There is no restriction on oil firing during periods of natural gas curtailment or supply interruption, and the license does not need to be amended for oil firing under such conditions.

C. Annual Emissions

1. Total Annual Emissions

City of Portland shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits were calculated based on unlimited firing of natural gas in the boilers.

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boiler #1	1.8	1.8	neg	3.6	3.0	0.2
Boiler #2	1.8	1.8	neg	3.6	3.0	0.2
Total TPY	3.6	3.6	neg	7.2	6.0	0.4

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 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), 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 facility’s fuel use;
- 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

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 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:

<u>Pollutant</u>	<u>Tons/Year</u>
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.

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-417-71-I-R subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License 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.

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions

units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).

- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]

- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [06-096 CMR 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [06-096 CMR 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]

- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) **Boilers**

A. Fuel

1. Boilers #1 and #2 are licensed to fire natural gas. [06-096 CMR 115, BPT]
2. Boilers #1 and #2 are licensed to fire distillate fuel within the confines of the definition of a "gas-fired boiler" as defined by 40 CFR 63.11237. [06-096 CMR 115, BPT]
3. Prior to July 1, 2016 or the date specified in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired in Boilers #1 and #2 shall have a maximum sulfur content of 0.5% by weight. [06-096 CMR 115, BPT]
4. Beginning July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), Boilers #1 and #2 shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
5. Beginning January 1, 2018 or on the date specified in 38 MRSA §603-A(2)(A)(3), Boilers #1 and #2 shall fire distillate fuel with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
6. Compliance with the distillate fuel sulfur limits shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered. City of Portland shall keep records of all oil firing including dates, duration, and reason for operating Boilers #1 or #2 on distillate fuel. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1 <i>natural gas</i>	PM	0.05	06-096 CMR 115, BPT
Boiler #1 <i>distillate fuel</i>	PM	0.08	06-096 CMR 115, BPT
Boiler #2 <i>natural gas</i>	PM	0.05	06-096 CMR 115, BPT
Boiler #2 <i>distillate fuel</i>	PM	0.08	06-096 CMR 115, BPT

C. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1 <i>natural gas</i>	0.42	0.42	neg	0.82	0.69	0.05
Boiler #1 <i>distillate fuel</i>	0.67	0.67	4.23	1.20	0.30	0.02
Boiler #2 <i>natural gas</i>	0.42	0.42	neg	0.82	0.69	0.05
Boiler #2 <i>distillate fuel</i>	0.67	0.67	4.23	1.20	0.30	0.02

D. Visible Emissions

1. When only natural gas is being fired in the boilers, visible emissions from Stack #1 shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.
 [06-096 CMR 115, BPT]
2. When either Boiler #1 or Boiler #2 are firing distillate fuel, visible emissions from Stack #1 shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.
 [06-096 CMR 115, BPT]

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Departmental
Findings of Fact and Order
Air Emission License
Renewal

- (17) City of Portland shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF April, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Corne for
PATRICIA W. AHO, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 9/10/14

Date of application acceptance: 9/17/14

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

