



DEPARTMENT ORDER

**Thornton Academy  
 York County  
 Saco, Maine  
 A-474-71-J-R**

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

**FINDINGS OF FACT**

After review of the air emission 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 (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Thornton Academy (TA) has applied to renew their Air Emission License for the operation of emission sources associated with their school.

The equipment addressed in this license is located at 438 Main Street, Saco, Maine.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

**Boilers**

<b>Equipment</b>	<b>Maximum Input Capacity</b>	<b>Fuel Type, % sulfur</b>	<b>Maximum Firing Rate</b>	<b>Date of Manuf.</b>	<b>Date of Install.</b>	<b>Stack #</b>
Fine Arts #1	5.0 MMBtu/hr	Natural gas, Negligible sulfur	4900 scf/hr	1995	1995	Fine Arts Stack
Fine Arts #2	5.0 MMBtu/hr	Natural gas, Negligible sulfur	4900 scf/hr	1995	1995	
TA Gym #1	2.0 MMBtu/hr	Natural gas, Negligible sulfur	1940 scf/hr	2009	2009	Gym Stack
TA Gym #2	2.0 MMBtu/hr	Natural gas, Negligible sulfur	1940 scf/hr	2009	2009	
Main Bldg. #1	1.5MMBtu/hr	Natural gas, Negligible sulfur	1485 scf/hr	2001	2001	Main Bldg. Stack
Main Bldg. #2	1.5 MMBtu/hr	Natural gas, Negligible sulfur	1485 scf/hr	2001	2001	

TA also operates the following boilers which have input capacities lower than the minimum licensing threshold. Some of these have changed since the last renewal;

however, because they are below minimum licensing threshold, no amendment is necessary. These boilers are included for inventory purposes only.

Equipment	Max. Capacity (MMBtu/hr)	Fuel Type, % sulfur	Maximum Firing Rate	Date of Manuf.	Date of Install.
TA Middle School #1	0.5	Distillate Fuel, 0.5% sulfur by weight	3.5 gal/hr	2006	2007
TA Middle School #2	0.5	Distillate Fuel, 0.5% sulfur by weight	3.5 gal/hr	2006	2007
Thornton Hall #1	0.5	Distillate Fuel, 0.5% sulfur by weight	3.65 gal/hr	1998	1998
Emery/Locke #1	0.8	Natural gas, Negligible sulfur	780 scf/hr	2015	2015
Dorm A #1	0.4	Propane, Negligible sulfur	4.25 gal/hr	2009	2009
Dorm D #1	0.4	Propane, Negligible sulfur	4.25 gal/hr	2011	2011
Dorm D #2	0.4	Propane, Negligible sulfur	4.25 gal/hr	2011	2011

C. Definitions

*Distillate Fuel.* For the purposes of this license, *distillate fuel* means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) 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

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 application for TA does not include the licensing of increased emissions or the installation of new or modified equipment above minimum licensing thresholds pursuant to 06-096 C.M.R. ch. 115. 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 (C.M.R.) ch. 115. The facility is licensed below the major source thresholds for criteria pollutants and is considered a minor source. It also does not have the potential to emit hazardous air pollutants (HAP) above major source thresholds 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 C.M.R. ch. 100. 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

TA operates several boilers for building heat. Six of the boilers are above the minimum licensing threshold, while the rest fall below. The six boilers, Fine Arts #1 & #2; TA Gym #1 & #2; and Main Bldg. #1 & #2 are rated at 5.0 MMBtu/hr, 5.0 MMBtu/hr, 2.0 MMBtu/hr, 2.0 MMBtu/hr, 1.53 MMBtu/hr, and 1.53 MMBtu/hr, respectively, and they all fire natural gas. The Fine Arts Boilers (inst. 1995) share a stack, the TA Gym boilers (inst. 2009) share a stack, and the Main Bldg. Boilers (inst. 2001) share a stack.

1. BPT Findings

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

Natural Gas

PM/PM <sub>10</sub>	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT for <u>Fine Arts Boilers #1 &amp; #2</u> 7.6 lb/MMscf based on AP-42 Table 1.4-2, dated 7/98 for <u>TA Gym Boilers #1 &amp; #2, Main Bldg. Boilers #1 &amp; #2</u>
SO <sub>2</sub>	0.6 lb/MMscf based on AP-42 Table 1.4-2, dated 7/98 for <u>all six Boilers</u>
NO <sub>x</sub>	100 lb/MMscf based on AP-42 Table 1.4-1, dated 7/98 for <u>all six boilers</u>

CO	84 lb/MMscf based on AP-42 Table 1.4-1, dated 7/98 <u>for all six Boilers</u>
VOC	5.5 lb/MMscf based on AP-42 Table 1.4-2, dated 7/98 <u>for all six Boilers</u>
Visible Emissions	06-096 C.M.R. ch. 115, BPT

The BPT emission limits for the boiler are the following:

Unit	Pollutant	lb/MMBtu
Fine Arts #1	PM	0.05
Fine Arts #2	PM	0.05

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)
Fine Arts #1 Natural gas	0.25	0.25	0.003	0.49	0.41	0.03
Fine Arts #2 Natural gas	0.25	0.25	0.003	0.49	0.41	0.03
TA Gym #1 Natural gas	0.01	0.01	0.001	0.19	0.16	0.01
TA Gym #2 Natural gas	0.01	0.01	0.001	0.19	0.16	0.01
Main Bldg. #1 Natural gas	0.01	0.01	0.001	0.15	0.12	0.01
Main Bldg. #2 Natural gas	0.01	0.01	0.001	0.15	0.12	0.01

Visible emissions from the Fine Arts Stack, TA Gym Stack, and Main Bldg. Stack shall each 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 each of TA's Boilers, none are 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 JJJJJJ

Due to the firing of only natural gas in each of TA's licensed Boilers, none are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ.. [40 C.F.R. §§63.11193 and 63.11195]

Gas-fired boilers are exempt from 40 C.F.R. Part 63, Subpart JJJJJJ. 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 C.F.R. § 63.11237]

Any boiler designed to burn fuels besides gaseous fuels prior to June 4, 2010, will be considered an existing boiler under this rule. A boiler which currently fires gaseous fuels, but converts back to firing another fuel (such as distillate fuel) in the future would become subject as an existing boiler at the time it is converted back to oil.

C. Annual Emissions

1. Total Annual Emissions

Thornton Academy shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on the maximum-potential of 8760 hours of operation per year of each of the six boilers addressed in this license.

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

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Fine Arts #1	1.1	1.1	0.01	2.1	1.8	0.1
Fine Arts #2	1.1	1.1	0.01	2.1	1.8	0.1
TA Gym #1	0.1	0.1	0.01	0.8	0.7	0.1
TA Gym #2	0.1	0.1	0.01	0.8	0.7	0.1
Main Bldg. #1	0.1	0.1	--	0.7	0.5	0.04
Main Bldg. #2	0.1	0.1	--	0.7	0.5	0.04
<b>Total TPY</b>	<b>2.4</b>	<b>2.4</b>	<b>0.1</b>	<b>7.2</b>	<b>6.0</b>	<b>0.5</b>

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:

- 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 <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 A-474-71-J-R subject to the following conditions.

Severability. The invalidity or unenforceability of any provision of this License or part thereof 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. § 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]

- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. 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 C.F.R. 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 C.M.R. ch. 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 C.F.R. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]

**SPECIFIC CONDITIONS**

**(16) Boilers**

A. Fine Arts #1 & #2, TA Gym #1 & #2, and Main Bldg. #1 & #2 shall each only fire natural gas. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Fine Arts #1	PM	0.05	06-096 C.M.R. ch. 115, BPT
Fine Arts #2	PM	0.05	06-096 C.M.R. ch. 115, BPT

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

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)
Fine Arts #1 Natural gas	0.25	0.25	0.003	0.49	0.41	0.03
Fine Arts #2 Natural gas	0.25	0.25	0.003	0.49	0.41	0.03
TA Gym #1 Natural gas	0.01	0.01	0.001	0.19	0.16	0.01
TA Gym #2 Natural gas	0.01	0.01	0.001	0.19	0.16	0.01
Main Bldg. #1 Natural gas	0.01	0.01	0.001	0.15	0.12	0.01
Main Bldg. #2 Natural gas	0.01	0.01	0.001	0.15	0.12	0.01

D. Visible emissions from the Fine Arts Stack, the TA Gym Stack, and the Main Bldg. Stack shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

Thornton Academy  
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A-474-71-J-R

Departmental  
Findings of Fact and Order  
Air Emission License  
Renewal

(17) Thornton Academy 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. § 605).

DONE AND DATED IN AUGUSTA, MAINE THIS 28 DAY OF December, 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Core for  
PAUL MERCER, COMMISSIONER

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

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 06/15/2016

Date of application acceptance: 06/20/2016

Date filed with the Board of Environmental Protection:

This Order prepared by Colby Fortier-Brown, Bureau of Air Quality.

