

Gould Academy
Oxford County
Bethel, Maine
A-721-71-D-R

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

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 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Gould Academy of Bethel, Maine has applied to renew their Air Emission License permitting the operation of emission sources associated with their Bethel, Maine private high school.

B. Emission Equipment

Gould Academy is authorized to operate the following equipment:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Location</u>	<u>Stack #</u>
Boiler #1	10.5	75	#2 Oil, 0.5%	Bingham Hall	1
Boiler #2	6.3	45	#2 Oil, 0.5%	Bingham Hall	1
Boiler #3	6.3	45	#2 Oil, 0.5%	Bingham Hall	1
Boiler #4	2.7	20	#2 Oil, 0.5%	Dining Hall	2
Boiler #5	2.7	20	#2 Oil, 0.5%	Dining Hall	2

Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (Kw)</u>	<u>Fuel Type</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Pollution Controls Equipment</u>	<u>Stack #</u>
Generator #1	80	Propane	10.6	None	3

C. Application Classification

The application for Gould Academy 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 current licensed emission units only.

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 (last amended December 1, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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 emission from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Facility Boilers

Gould Academy operates Boilers #1 through #5 for heat and hot water needs of the educational facility. Boiler #1 is located in Bingham Hall and has a maximum design heat input capacity of 10.5 MMBtu/hr firing #2 fuel oil. Boiler #1 was manufactured by Burnham Boilers in 1997. Boiler #1 is subject to EPA New Source Performance Standards (NSPS) 40 CFR Subpart Dc, for boilers with a heat input of 10 MMBtu/hr or greater and manufactured after June 9, 1989.

Boilers #2 and #3 are located in Bingham Hall and were manufactured by Kewanee Boilers in 1962. Boilers #2 and #3 each have maximum design heat input capacities of 6.3 MMBtu/hr firing #2 fuel oil. Boilers #2 and #3 are not subject to EPA NSPS 40 CFR Subpart Dc.

Boilers #4 and #5 are located in the dining hall. Boilers #4 and #5 were manufactured by Smith Boilers in 1997 and each have maximum design heat input capacities of 2.7 MMBtu/hr firing #2 fuel oil. Boilers #4 and #5 are not subject to EPA NSPS 40 CFR Subpart Dc.

Gould Academy has a licensed facility annual #2 fuel oil use cap of 850,000 gallons per year of #2 fuel oil based on a twelve-month rolling total. All #2 fuel oil fired in the Gould Academy boilers must meet the criteria in ASTM D396 for #2 fuel oil. To demonstrate compliance with the annual fuel cap, Gould Academy shall maintain a fuel use log that shows the twelve-month rolling total fuel use and includes fuel purchase receipts indicating fuel purchase dates and fuel purchase amounts.

A summary of the BPT analysis for boiler #1 (10.5 MMBtu/hr), boiler #2 (6.3 MMBtu/hr), boiler #3 (6.3 MMBtu/hr), boiler #4 (2.7 MMBtu/hr) and boiler #5 (2.7 MMBtu/hr) is as follows:

1. *Fuel Burning Equipment Particulate Emission Standard*, 06-096 CMR 103, (last amended November 3, 1990) regulates PM emission limits. However, the PM emission limit of 0.12 lb/MMBtu when firing #2 fuel oil is more stringent and shall be considered BPT. PM₁₀ emission limits are derived from PM limits.
2. SO₂ emissions limits are based on the firing of #2 fuel oil which meets the criteria in ASTM D396 for #2 fuel oil.
3. BPT emission rate for NO_x emission limits for #2 fuel oil is 0.3 lb/MMBtu.
4. CO and VOC emission limits are based upon previously licensed limits.
5. Visible emissions from the boilers are subject to *Visible Emissions Regulation*, 06-096 CMR 101 (last amended May 18, 2003). Visible emissions from the Boiler Stack #1 or #2 each shall not exceed 20% opacity on a six-minute block average except, for no more than 2 six-minute block averages in a 3-hour period.

C. Generator #1

Gould Academy operates a back-up generator, designated Generator #1, for emergency electrical needs within the dining hall. Emergency Generator #1 has an approximate maximum design heat input capacity of 1.0 MMBtu/hr firing diesel fuel. Back-up generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available. By definition, a generator used for load shedding purposes (also known as a “Dispatchable Load Generator”) is not considered an “Emergency Generator”.

Gould Academy has a licensed operational limit on Generator #1 of 500 hours of operation per year based on a twelve-month rolling total. Generator #1 will be operated only when normal testing procedures, as recommended by the manufacturer, are being performed or in case of an emergency as defined in 06-096 CMR 100. To demonstrate compliance with hours of operation limits on Generator #1, Gould Academy shall continue to operate and maintain an hour meter on Generator #1. Gould Academy shall also maintain a log of operation of Generator #1 which shall include fuel purchase receipts, hours of operation, dates of operation and reason for operation.

A summary of the BPT analysis Generator #1 is as follows:

1. *Fuel Burning Equipment Particulate Emission Standard* 06-096 CMR 103 (last amended November 3, 1990) regulates PM emission limits. The PM₁₀ limits are derived from the PM limits.
2. BPT for the control of sulfur emissions is the firing of propane.
3. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
4. Visible emissions from Generator #1 are subject to 06-096 CMR 101. Visible emissions from the Generator #1 stack shall not exceed 20% opacity on a six-minute block average, except for no more than 2 six-minute block averages in a 3-hour period.

D. Annual Emission Restrictions

- Gould Academy shall fire no more than 850,000 gallons per year of #2 fuel oil based on a twelve-month rolling total in the facility's boilers. All #2 fuel oil fired in the Gould Academy boilers must meet the criteria in ASTM D396 for #2 fuel oil.
- Emissions calculations for Diesel Unit #1 are based on an annual hours of operation limit of 500 hours and the use of propane.

Total Allowable Annual Emission for the Facility
(used to calculate the annual license fee)

Pollutant	Tons/Year
PM	7.1
PM ₁₀	7.1
SO ₂	30.0
NO _x	17.9
CO	18.1
VOC	5.7

III. AMBIENT AIR QUALITY ANALYSIS

According to *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 1, 2005), the level of air quality analyses required for a minor source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source. Based on the total facility emissions, the Gould Academy is below the emissions level required for modeling and monitoring.

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,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-721-71-D-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 (Title 38 MRSA §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 06-096 CMR 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.
- (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:
- (i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - a. 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
 - b. pursuant to any other requirement of this license to perform stack testing.
 - (ii) 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
 - (iii) 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:
- (i) 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
 - (ii) 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

- (iii)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 emission 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) Facility Boilers
- A. Gould Academy shall not exceed a total annual facility fuel cap of 850,000 gallons per year of #2 fuel oil based on a twelve-month rolling total. All #2 fuel oil fired in the Gould Academy boilers must meet the criteria in ASTM D396 for #2 fuel oil. [06-096 CMR 115, BPT]
- B. Gould Academy shall maintain a fuel use log that shows the twelve-month rolling total fuel use and includes fuel purchase receipts indicating fuel purchase dates and fuel purchase amounts.
[06-096 CMR 115, BPT]

C. Boiler emissions shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	1.3	1.3	5.3	3.2	3.2	1
Boiler #2	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.8	0.8	3.2	1.9	1.9	0.6
Boiler #3	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.8	0.8	3.2	1.9	1.9	0.6
Boiler #4	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.3	0.3	1.4	0.8	0.8	0.3
Boiler #5	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.3	0.3	1.4	0.8	0.8	0.3

D. Visible emissions from Boiler Stack #1 or #2 each shall not exceed 20% opacity on a six-minute block average except, for no more than 2 six-minute block averages in a 3-hour period. [06-096 CMR 101]

E. Boiler #1 is subject to 40 CFR Part 60 Subparts A and Dc and Gould Academy shall comply with the notification and record keeping requirements of 40 CFR Part 60.7.

(17) New Source Performance Standards for Dc Boilers

Boilers #1 is subject to Federal New Source Performance Standards, Subpart Dc. Gould Academy shall comply with all requirements of 40 CFR Part 60, Subpart Dc including, but not limited to, the following:

A. Gould Academy shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up. This notification shall include the design heat input capacity of the boilers and the type of fuel to be combusted.

B. Gould Academy shall record and maintain records of the amounts of each fuel combusted during each day.

C. Gould Academy shall submit to EPA and the Department semi-annual reports. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each 6-month period.

D. The following address for EPA shall be used for any reports or notifications required to be copied to them:

Compliance Clerk
USEPA Region 1
1 Congress Street
Suite 1100
Boston, MA 02114-2023

(18) Generator #1

A. Generator #1 shall be limited to 500 hours per year of operation, based on a 12 month rolling total. The Generator #1 hour meter shall continue to be operated and maintained.

[06-096 CMR 115, BPT]

B. Generator #1 shall be operated only when normal testing procedures, as recommended by the manufacturer, are being performed or for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. [06-096 CMR 115, BPT]

C. Gould Academy shall also maintain a log of operation of Generator #1 which shall include fuel purchase receipts, hours of operation, dates of operation and reason for operation. [06-096 CMR 115, BPT]

D. Emissions from Generator #1 shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Diesel Unit #1	lb/hr	0.12	0.12	0.05	4.41	0.95	0.35

[06-096 CMR 115, BPT]

E. Visible emissions from the Generator #1 stack (Stack #3) shall not exceed 20% opacity on a six-minute block average, except for no more than 2 six-minute block averages in a 3-hour period. [06-096 CMR 101]

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

- (19) Gould 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 (Title 38 MRSA §605-C).

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

The term of this Order shall be for five (5) years from the signature above

Date of initial receipt of application: **September 27, 2007**

Date of application acceptance: **October 2, 2007**

Date filed with the Board of Environmental Protection: _____

This Order prepared by, Peter G. Carleton, Bureau of Air Quality