



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

**MSAD #17 – Oxford Hills
Comprehensive High School
Oxford County
Paris, Maine
A-1015-71-B-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

After review of the air emissions license amendment 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., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. MSAD #17 – Oxford Hills Comprehensive High School (Oxford Hills) was issued Air Emission License A-1015-71-A-N on September 10, 2009, permitting the operation of emission sources associated with their educational facility.
2. The equipment addressed in this license is located at 256 Main Street, South Paris, ME.
3. Oxford Hills has requested an amendment to their license to include installation of a 3.7 MMBtu/hr hot water generating wood chip boiler.

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 (lb/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Boiler #4	3.7	750	Wood chips, 45% moisture	1

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 04679-2094
(207) 764-0477 FAX: (207) 760-3143

C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the “Significant Emission Levels” as defined in the Department’s regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Significance Level</u>
PM	0.8	2.8	2.0	100
PM ₁₀	0.8	2.8	2.0	100
SO ₂	3.6	3.8	0.2	100
NO _x	8.9	10.3	1.4	100
CO	2.1	5.9	3.9	100
VOC	0.2	0.3	0.1	50

This modification is 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 CMR 100 (last amended December 24, 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 new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 24, 2005). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boiler # 4

Oxford Hills is proposing to install a 3.8 MMBtu/hr wood fired boiler to produce hot water to heat the high school. Boiler #4 is a Pyrotec Model 950.

Because of its size, Boiler #4 is therefore 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.

The proposed Boiler #4 uses a burner trough with an attached external grate and a moving annealing grate to achieve combustion. A feed auger moves the wood into the burner trough where the fuel is pre-dried and gasified under controlled primary air (underfeed combustion). On the external and moving annealing grate, the fuel is complete gasified, then controlled secondary air is injected to combust the gas. The boiler includes a triple pass heat exchanger. Emissions are controlled by a multi cyclone.

A summary of the BACT analysis for Boiler #4 is the following:

1. Good combustion practices.
2. The total fuel use for the facility shall not exceed 1300 tons per year of wet wood (45% moisture content, 4950 Btu/lb heat content), based on a calendar year.
Compliance shall be based on delivery records, including receipts, of wood chip truck deliveries, and tallying the deliveries each month to document fuel consumed. Wood chip delivery weight is expected to range between 30 and 35 tons per load.
3. *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.
4. SO₂, NO_x, CO, and VOC emission limits are based upon AP-42 data dated 9/03.
5. Visible emissions from the boiler shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block average in a continuous 3-hour period.

C. Annual Emissions

Oxford Hills shall be restricted to the following annual emissions, based on a 12-month rolling total:

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers #1, #2, #3 (Oil Fired)	0.56	0.56	3.53	2.10	0.25	0.02
Emergency Generator	0.26	0.26	0.11	6.81	1.81	0.19
Boiler #4 (Wood Fired)	1.93	1.93	0.16	1.42	3.86	0.11
Total TPY	2.8	2.8	3.8	10.3	5.9	0.3

III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

Pollutant	Tons/Year
PM	25
PM ₁₀	25
SO ₂	50
NO _x	100
CO	250

Based on the total facility licensed emissions, Oxford Hills 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-1015-71-B-A subject to the conditions found in Air Emission License A-1015-71-A-N.

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.

The following new condition shall be designated number (17); existing conditions in license A-1015-71-A-N, numbers (17), (18) and (19) shall be redesignated numbers (18), (19) and (20) respectively.

(17) Boiler #4

- A. Total fuel use for Boiler #4 shall not exceed 1,300 tons per year at of wet wood (45% moisture, 4950 Btu/lb heat content). Records of annual fuel use shall be kept on a calendar year basis. Compliance shall be demonstrated by monthly deliveries, including the number of wood chip truck loads delivered and the weight of wood per delivery. [06-096 CMR 115, BPT]
- B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #4	PM	0.30	06-096 CMR 103, BACT

C. Emissions shall not exceed the following [MEDEP Chapter 115, BPT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #4	1.11	1.11	0.09	0.81	2.22	0.06

D. Visible emissions from Boiler #4 shall each not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

DONE AND DATED IN AUGUSTA, MAINE THIS *18th* DAY OF *May*, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *James P. Brophy*

DAVID P. LITTELL, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-1015-71-A-N.

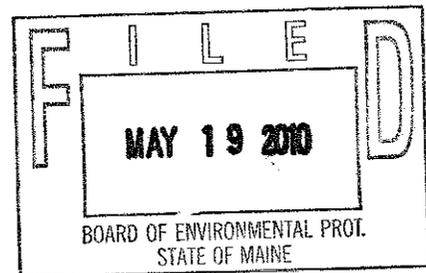
PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 01/28/2010

Date of application acceptance: 02/02/2010

Date filed with the Board of Environmental Protection:

This Order prepared by N. Lynn Cornfield, Bureau of Air Quality.



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