STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION | AUGUSTA, MAINE 04333-0017
DEPARTMENT ORDER

Pine Grove Crematorium	**|**	**Departmental**
Penobscot County	**|**	**Findings of Fact and Order**
Bangor, Maine	**|**	**Air Emission License**
A-949-71-F-R	**|**	**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

Pine Grove Crematorium (Pine Grove) has applied to renew their Air Emission License for the operation of three Class IV-A cremators.

This license completes the processing of the application with submission number 604244 as assigned by the Department (accepted 9/22/2026).

The equipment addressed in this license is located at 1347 Hammond St., Bangor, Maine.

B. Emission Equipment

Pine Grove operates three crematory incinerators identified as Cremators #1, #2, and #3.

1. Cremator #1 is a B & L Systems Model Phoenix II-1 Human Crematory Incinerator, manufactured and installed in 2017 with the following specifications:

Class Incinerator	IV-A
No. of Chambers	2
Type of Waste	Type 4
Max Initial Charge (lb)	1,000
Max. Design Combustion Rate (lb/hr)	150
Auxiliary Fuel Input:	Natural Gas
Primary Chamber (MMBtu/hr)	0.5
Secondary Chamber (MMBtu/hr)	1.0
Emission Control	Afterburner

Cremator #1 combustion gases vent to a 30-foot above-ground-level (AGL) stack, Stack #1.

2. Cremator #2 is a B & L Systems Model N-20AA Human Crematory Incinerator. Cremator #2 was manufactured and installed in 2006 with the following specifications:

Class Incinerator	IV-A
No. of Chambers	2
Type of Waste	Type 4
Max. Initial Charge (lb)	500
Max. Design Combustion Rate (lb/hr)	150
Auxiliary Fuel Input:	Natural Gas
Primary Chamber (MMBtu/hr)	0.5
Secondary Chamber (MMBtu/hr)	1.0
Emission Control	Afterburner

Cremator #2 combustion gases vent to a 30-foot AGL stack, Stack #2.

3. Cremator #3 is a B & L Systems Model N-20AA Human Crematory Incinerator. Cremator #3 was manufactured in 2022 and installed in 2023 with the following specifications:

Class Incinerator	IV-A
No. of Chambers	2
Type of Waste	Type 4
Max. Initial Charge (lb)	700
Max. Design Combustion Rate (lb/hr)	150
Auxiliary Fuel Input:	Natural Gas
Primary Chamber (MMBtu/hr)	0.5
Secondary Chamber (MMBtu/hr)	1.0
Emission Control	Afterburner

Cremator #3 combustion gases vent to a 30-foot AGL stack, Stack #3.

C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

The application for Pine Grove 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 (C.M.R.) ch. 115.

D. Facility Classification

The facility is licensed as follows:

- As a natural minor source of criteria pollutants, because no license restrictions are necessary to keep facility emissions below 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 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. Cremators #1, #2, and #3

BPT for the crematory incinerators are the following:

1. Emission Limits

Emissions information is based on the burning of natural gas as an auxiliary fuel and the use of the following factors as described below.

The BPT emissions from the natural gas burner portion of the total exhaust were based on the following:

$PM/PM_{10}/PM_{2.5}$ – 0.05 lb/MMBtu, 06-096 C.M.R. ch. 115, BPT
SO_2 – 0.6 lb/MMscf, AP-42 Table 1.4-2 dated 4/26
NO_x – 100 lb/MMscf, AP-42 Table 1.4-2 dated 4/26

CO – 84 lb/MMscf, AP-42 Table 1.4-2 dated 4/26
VOC – 5.5 lb/MMscf, AP-42 Table 1.4-2 dated 4/26

The BPT emissions from the biomedical portion of the total exhaust were based on the following:

$PM/PM_{10}/PM_{2.5}$ – 4.67 lb/ton, AP-42 Table 2.3-2 dated 7/93
SO_2 – 2.17 lb/ton, AP-42 Table 2.3-2 dated 7/93
NO_x – 3.56 lb/ton, AP-42 Table 2.3-2 dated 7/93
CO – 2.95 lb/ton, AP-42 Table 2.3-2 dated 7/93
VOC – 0.299 lb/ton, AP-42 Table 2.3-2 dated 7/93

The pound per hour BPT emissions for Cremators #1, #2, and #3 are each as follows:

	PM (lb/hr)	**PM_{10} (lb/hr)**	**$PM_{2.5}$ (lb/hr)**	**SO_2 (lb/hr)**	**NO_X (lb/hr)**	**CO (lb/hr)**	**VOC (lb/hr)**
Fuel Combustion	0.08	0.08	0.08	-	0.15	0.12	0.01
Biomedical Portion	0.35	0.35	0.35	0.16	0.27	0.22	0.02
Total Emission Limit	0.43*	0.43	0.43	0.16	0.42	0.34	0.03

* This standard has been determined to be more stringent than the applicable PM standard in 06-096 C.M.R. ch. 104.

Each crematory incinerator exhausts through its own separate stack. Visible emissions from each cremator stack shall not exceed 10% opacity based on a six-minute block average basis.

2. Operating Parameters

   a. Operating temperature in each secondary chamber shall be maintained at or above 1,600 ºF for the duration of the burn cycle, with a stack gas retention time at or above 1,600 ºF of at least 1.0 second.
   b. To ensure an efficient burn, and to prevent odors and visible emissions, each secondary chamber shall be preheated, as specified by the manufacturer, until the pyrometer temperature measures at least 1,600 ºF.
   c. No remains shall be introduced into any primary chamber until the temperature in the corresponding secondary chamber has reached 1,600 °F.
   d. Once the burn cycle has commenced by introduction of primary chamber combustion, the cremator shall be operated in an efficient manner, and as specified by the manufacturer, for the period of time between preheat and reaching the set operational temperature to be a minimum of 1,600 °F in the secondary chamber.

e. A pyrometer and ¼-inch test port shall be installed and maintained at that location of each cremator or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second at a minimum of 1,600 ºF.
f. A log shall be maintained for each cremator recording the weight of the remains, preheat time, charging time, and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged shall be logged on the chart.
g. The cremator operator(s) shall receive adequate training to operate the cremator in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License.

C. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on each crematory incinerator operating for 8,760 hours per calendar year at the maximum combustion and charge rates.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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

	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	VOC
Cremator #1	1.9	1.9	1.9	0.7	1.8	1.5	0.1
Cremator #2	1.9	1.9	1.9	0.7	1.8	1.5	0.1
Cremator #3	1.9	1.9	1.9	0.7	1.8	1.5	0.1
Total TPY	**5.7**	**5.7**	**5.7**	**2.1**	**5.4**	**4.5**	**0.3**

Pollutant	Tons/year
Single HAP	7.9
Total HAP	19.9

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_{10}	25
$PM_{2.5}$	15
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.

This determination is based on information provided by the applicant regarding licensed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require Pine Grove to submit additional information and may require an ambient air quality impact analysis at that time.

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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-949-71-F-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 beginning actual 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] Payment of the annual air emission license fee for Pine Grove is due by the end of August of each year. [38 M.R.S. § 353-A(3)]

(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 the written test report by the Department, or another alternative timeframe approved by the Department, 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 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]

(16) The licensee 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). [06-096 C.M.R. ch. 115]

Specific Conditions

(17) **Cremators #1, #2, and #3**

A. Each cremator shall be used for the disposal of type 4 waste and shall not be used for the disposal of plastics, cytotoxic (antineoplastic) drugs, or any radioactive wastes and shall not be used to dispose of any medical waste classified as type 7 waste, as defined in 06-096 C.M.R. ch. 100.
[06-096 C.M.R. ch. 115, BPT]

B. Each cremator shall not exceed the unit's maximum design combustion rates. Auxiliary fuel inputs to the primary and secondary chambers shall be natural gas. Compliance shall be demonstrated through fuel receipts.
[06-096 C.M.R. ch. 115, BPT]

C. License allowed emissions for the cremators shall not exceed the following:

Cremator Emission Limits lb/hr

	Cremator #1	Cremator #2	Cremator #3
$PM/PM_{10}/PM_{2.5}$	0.43	0.43	0.43
SO_2	0.16	0.16	0.16
NOx	0.42	0.42	0.42
CO	0.34	0.34	0.34
VOC	0.03	0.03	0.03

Compliance shall be demonstrated through stack testing by request of the Department, in accordance with the appropriate method found in 40 C.F.R. Part 60, Appendix A. [06-096 C.M.R. ch. 115, BPT]

D. Visible emissions from each crematory incinerator stack shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

E. Operating temperature in each secondary chamber shall be maintained at or above 1,600 ºF with a stack gas retention time of at least 1.0 second. [06-096 C.M.R. ch. 115, BPT]

F. To ensure an efficient burn and to prevent odors and visible emissions, each secondary chamber shall be preheated, as specified by the manufacturer, until the pyrometer temperature measures at least 1,600 ºF.
[06-096 C.M.R. ch. 115, BPT]

G. No remains shall be introduced into any primary chamber until the temperature in the corresponding secondary chamber has reached 1,600 °F. [06-096 C.M.R. ch. 115 BPT]

H. Once the burn cycle has commenced by introduction of primary chamber combustion, the cremator shall be operated in an efficient manner, and as specified by the manufacturer, for the period of time between preheat and reaching the set operational temperature to be a minimum of 1,600 ^{0}F in the secondary chamber. The temperature in the secondary chamber shall be maintained at a minimum of 1,600 ºF for the duration of the burn cycle. [06-096 C.M.R. ch. 115, BPT]

I. A pyrometer and ¼-inch test port shall be installed and maintained at that location of each cremator or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second at a minimum of 1,600 ºF. [06-096 C.M.R. ch. 115, BPT]

J. Each cremator shall not exceed the unit's maximum design combustion rates. To ensure compliance, a log shall be maintained for each cremator recording the weight of the remains, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged shall be logged on the chart. [06-096 C.M.R. ch. 115, BPT]

K. The cremator operator(s) shall receive adequate training to operate the cremator in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License.
[06-096 C.M.R. ch. 115, BPT]

(18) **Additional Information**

If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, Pine Grove may be required to submit additional information. Upon written request from the Department, Pine Grove shall provide information necessary to demonstrate ambient air quality standards (AAQS) will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter. [06-096 C.M.R. ch. 115, § 2(O)]

Done and Dated in Augusta, Maine this 13th day of NOVEMBER, 2026.

Department of Environmental Protection

BY: _____
for Melanie Loyzim, 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: September 21, 2026
Date of application acceptance: September 22, 2026

This Order prepared by Zac Hicks, Bureau of Air Quality.