



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

**Dicaperl Minerals Corp.
Knox County
Thomaston, Maine
A-330-71-I-R/T**

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

FINDINGS OF FACT

After review of the air emissions license renewal and transfer applications, 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

Dicaperl Minerals Corp. has requested the transfer of this Air Emission License from Chemrock Corporation to Dicaperl Minerals Corp. (Dicaperl) through a letter to the Bureau of Air Quality dated 7/23/14.

Dicaperl has applied to renew their Air Emission License permitting the operation of emission sources associated with their perlite manufacturing facility.

The equipment addressed in this license is located at 94 Buttermilk Lane, Thomaston, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Control Devices</u>
Expansion Furnace	6.6	47.9	distillate fuel, 0.5%	Baghouse #1 & Baghouse #2

Process Equipment

<u>Equipment</u>	<u>Production Rate</u>	<u>Pollution Control Equipment</u>
Pneumatic Conveyor & Williams Unit	1.8 ton/hr	Baghouse #1 & Baghouse #2

C. Application Classification

The application for Dicaperl 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). With the annual fuel limit on the expansion furnace the facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of HAP.

II. TRANSFER REQUIREMENTS

A. Title, Right, or Interest

In August 2010 Chemrock Corporation merged with Dicaperl Minerals Corp. A copy of the merger agreement has been provided to the Department. The parties have provided sufficient evidence of title, right, or interest in the facility to allow the transfer of the facility's licenses.

B. Technical Capacity and Intent

Dicaperl's acquisition of the facility is not expected to result in any significant change in the employees that currently operate the equipment, facilities, and conduct other activities. The facility's regulatory history with the Department demonstrates that the environmental personnel are competent in air pollution control. The information submitted in the application provides sufficient evidence that Dicaperl has the technical capacity and intent to comply with their air emission license.

C. Certification

Dicaperl certifies that there will be no increase in air emissions beyond that provided for in the existing licenses, either in quantity or type.

III. 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.

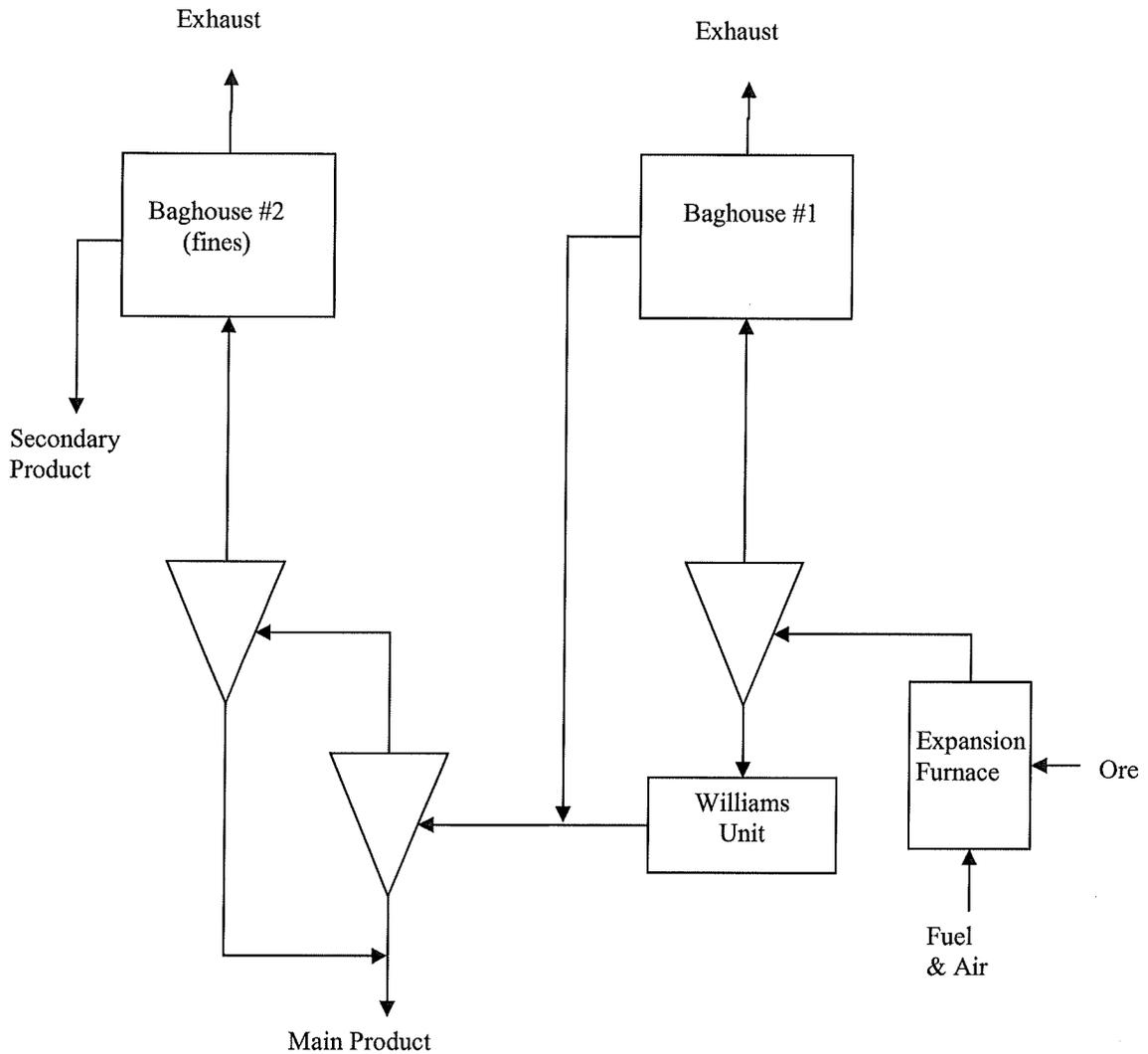
BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- 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. Process Description

Combustion air, fuel and raw perlite ore go into the furnace. Expanded perlite and air go through the piping to a collector cyclone. Product is pneumatically conveyed from the collector cyclone into a Williams Unit (mechanical classifier). Fines from the top of the collector cyclone go to Baghouse #1 for collection. Fines from this baghouse are dropped back into the system after the Williams Unit to make additional baghouse product.

The Williams Unit processes the expanded perlite. This product is then collected in two cyclones. Whatever material passes over these two cyclones goes to the fines baghouse (Baghouse #2) and is collected as a secondary product.



C. Expansion Furnace, Pneumatic Conveyor, & Williams Unit

The Expansion Furnace has a maximum capacity of 6.6 MMBtu/hr and fires distillate fuel. It was installed in 2005. The process is vented through Baghouse #1 and Baghouse #2 as shown in the process description diagram above.

1. BPT Findings

The BPT emission limits for the Expansion Furnace and associated baghouses were based on the following:

- PM/PM₁₀ – 0.03 grains/dscf based on 06-096 CMR 115, BPT
- SO₂ – based on firing ASTM D396 compliant #2 fuel oil (0.5% sulfur by weight)
- NO_x – 0.3 lb/MMBtu based on 06-096 CMR 115, BPT
- 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

The BPT emission limits for the baghouses are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)
Baghouse #1	1.29	1.29
Baghouse #2	1.17	1.17

The BPT emission limits for the Expansion Furnace are the following (both baghouses combined):

Unit	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Expansion Furnace	3.32	1.98	0.24	0.02

Due to the abrasive nature of perlite, equipment must be monitored for developing leaks. Dicaperl has installed cameras and lighting to allow them to observe the baghouses more often and correct problems when they occur. BPT for the baghouses includes having certified personnel on-site trained in Method 9 observations as well as conducting Method 9 observations on the baghouses once per week.

Visible emissions from the baghouses shall each 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.

Dicaperl shall be limited to the use 300,000 gallons/year of distillate fuel.

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 Expansion Furnace shall be ASTM D396 compliant #2 fuel oil (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 Expansion Furnace shall include recordkeeping to document fuel use both on a monthly and calendar year basis. Documentation shall include the type of fuel used and sulfur content of the fuel.

Periodic monitoring for the baghouses shall include weekly Method 9 observations as well as keeping a maintenance log recording the date and location of all bag failures as well as routine maintenance.

3. 40 CFR Part 60, Subpart UUU

The Expansion Furnace is subject to New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart UUU, *Standards of Performance for Calciners and Dryers in Mineral Industries*. Subpart UUU is applicable to calciners at mineral processing plants manufactured after April 23, 1986. The definition of "Calciner" includes expansion furnaces. The definition of "Mineral processing plant" includes the processing of perlite ore.

Subpart UUU contains a PM limit of 0.04 grains/dscf for calciners. However, BPT for the Expansion Furnace determined a more stringent limit of 0.03 grains/dscf was appropriate.

Under Subpart UUU, Section 60.734(c), perlite expansion furnaces which use a dry control device (such as baghouses) are exempt from the monitoring requirements of this section.

D. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour.

E. General Process Emissions

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period.

F. Annual Emissions

1. Total Annual Emissions

Dicaperl shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits were calculated based on firing 300,000 gal/year of distillate fuel in the expansion furnace and operating the baghouses for 8760 hr/year.

Total Licensed Annual Emissions for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Expansion Furnace	—	—	10.6	6.3	0.8	0.1
Baghouse #1	5.7	5.7	—	—	—	—
Baghouse #2	5.1	5.1	—	—	—	—
Total TPY	10.8	10.8	10.6	6.3	0.8	0.1

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).

Based on the facility’s fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, Dicaperl is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

IV. 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.

Based on the above, the Department concludes that the applicant for the air emission license transfer has the capacity to satisfy all applicable statutory criteria and hereby APPROVES the transfer of this Air Emission License from Chemrock Corporation to Dicaperl Minerals Corp.

The Department hereby grants Air Emission License A-330-71-I-R/T subject 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) **Expansion Furnace, Pneumatic Conveyor, & Williams Unit**

A. Emissions from the expansion furnace system (which includes the expansion furnace, Williams Unit, and associated cyclones and conveyor system) shall vent to Baghouses #1 and #2 and all components of the expansion furnace system shall be maintained so as to prevent PM leaks. [06-096 CMR 115, BPT]

B. Fuel

1. Total fuel use for the facility shall not exceed 300,000 gal/yr of distillate fuel, based on a calendar year total basis. [06-096 CMR 115, BPT]
2. Prior to July 1, 2016 or the date specified in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired shall be ASTM D396 compliant #2 fuel oil (max. sulfur content of 0.5% by weight). [06-096 CMR 115, BPT]
3. Beginning July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
4. Beginning January 1, 2018 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
5. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered. Records of annual fuel use shall be kept on a monthly and calendar year total basis.
[06-096 CMR 115, BPT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	grains/dscf	Origin and Authority
Baghouse #1	PM	0.03	06-096 CMR 115, BPT
Baghouse #2	PM	0.03	06-096 CMR 115, BPT

D. Emissions shall not exceed the following [06-096 CMR 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)
Baghouse #1	1.29	1.29	—	—	—	—
Baghouse #2	1.17	1.17	—	—	—	—
Expansion Furnace (Baghouses #1 & #2 combined)	—	—	3.32	1.98	0.24	0.02

- E. Visible emissions from Baghouse #1 and Baghouse #2 shall each not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 115, BPT]
- F. General process emissions from the expansion furnace shall be controlled so as to prevent visible emissions in excess of 10% opacity on a six (6) minute block average basis. [40 CFR Part 60.732(b)]
- G. Dicaperl shall have personnel with a current EPA Method 9 visible emissions certification on site during all daylight operating hours. [06-096 CMR 115, BPT]
- H. Dicaperl shall perform Method 9 observations on Baghouses #1 and #2 a minimum of once per calendar week when the plant is in operation and keep records including the date, time, and results of those observations. Each Method 9 observation shall last a minimum of 30 minutes. [06-096 CMR 115, BPT]
- I. Dicaperl shall install and operate lights which clearly illuminate the baghouse exhausts at night. [06-096 CMR 115, BPT]
- J. To document maintenance of the baghouses, Dicaperl shall keep a maintenance log recording the date and location of all bag failures as well as all routine maintenance. The maintenance log shall be kept on-site at the plant location. [06-096 CMR 115, BPT]

(17) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour. [06-096 CMR 101]

Dicaperl Minerals Corp.
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(18) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

- (19) Dicaperl 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 19 DAY OF September, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Marc Allen Robert Cone 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: 7/30/14

Date of application acceptance: 7/30/14

Date filed with the Board of Environmental Protection:

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

