



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

DEPARTMENT ORDER

**General Contractor
Vaughn D. Thibodeau, II, Inc.
Waldo County
Prospect, Maine
A-1045-71-E-M (SM)**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #2**

FINDINGS OF FACT

After review of the air emission license amendment 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 (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

General Contractor Vaughn D. Thibodeau, II, Inc. (Thibodeau) was issued Air Emission License A-1045-71-C-R/M on September 4, 2015, for the operation of emission sources associated with their hot mix asphalt plant and crushed stone and gravel facility located at 995 Bangor Road in Prospect, Maine. The license was subsequently amended on March 28, 2016 (A-1045-71-D-A).

Thibodeau has requested an amendment to their license in order to install a new, larger baghouse in the asphalt batch plant in an effort to improve fuel efficiency. In addition, the license has been updated to use process throughput limits instead of fuel limits.

B. Emission Equipment

The following equipment is addressed in this Air Emission License Amendment:

Asphalt Plant

Equipment	Process Rate (tons/hour)	Design Capacity (MMBtu/hr)	Fuel Type, % sulfur	Control Device	Stack ID	Date of Manuf.
Asphalt Batch Plant	150	35.0	Propane; Distillate fuel, 0.5% S; Spec waste oil, 0.7% S	Baghouse	1	1954

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 modification of a minor source is considered a major or minor modification based on whether or not expected emissions increases exceed the "Significant Emissions" levels as defined in the Department's *Definitions Regulation*, 06-096 C.M.R. ch. 100.

This amendment will not increase emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

II. BEST PRACTICAL TREATMENT

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 new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Revision Description

Thibodeau intends to replace its present baghouse with a new larger baghouse. Several times during the past operating season, the existing burner was operated at the maximum output with lower than expected production. The asphalt plant manufacturer has recommended an upgrade to the baghouse to improve plant performance and fuel efficiency. The present baghouse designed for a flow rate of 41,000 cfm will be replaced with a newer baghouse designed for a flow rate of 54,000 cfm. Thibodeau does not intend to increase its total production or fuel use.

C. Asphalt Plant

Thibodeau operates an asphalt batch plant with a maximum hourly throughput of 150 ton/hr of asphalt and a 35 MMBtu/hr burner. In the past, it has been assumed that there is a linear relationship between the fuel required for an asphalt plant burner and the plant output. Meaning, it has been assumed that to operate at 100% throughput requires the burner to fire at 100%, to operate at 75% throughput requires the burner to fire at 75%, etc. This assumption allows for an asphalt plant to have its annual emissions limited by placing a fuel limit on the burner.

However, in some cases it has been determined that the asphalt plant is operated significantly more efficiently than originally anticipated. This allows the burner to operate at a lower firing rate than would be expected for the asphalt output. Since emission factors for asphalt plants are based on tons of asphalt produced, without the previously mentioned linear relationship between plant output and burner firing rate, a fuel limit on the asphalt plant is not sufficient to limit the equipment's annual emissions.

Therefore, to ensure annual emissions are limited to less than major source thresholds, asphalt throughput is limited instead of fuel consumption. Accordingly, the annual throughput of the asphalt batch plant shall not exceed 174,000 tons of asphalt per year on 12-month rolling total basis.

1. BACT Findings

The BACT emission limits for the Asphalt Batch Plant were based on the following:

- PM, PM₁₀ – 0.03 gr/dscf and the use of a baghouse
- SO₂ – 0.088 lb/ton based on AP-42 Table 11.1-5 dated 3/04
- NO_x – 0.12 lb/ton based on AP-42 Table 11.1-5 dated 3/04
- CO – 0.40 lb/ton based on AP-42 Table 11.1-5 dated 3/04
- VOC – 0.0082 lb/ton based on AP-42 Table 11.1-6 dated 3/04
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the Asphalt Batch Plant are the following:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Asphalt Batch Plant	11.91	11.91	13.2	18.0	60.1	1.23

Visible emissions from the asphalt plant baghouse shall not exceed 20% opacity on a six-minute block average basis.

General process emissions from the asphalt plant shall be controlled so as to prevent visible emissions in excess of 20% opacity on a six-minute block average basis.

The Asphalt Batch Plant is licensed to fire distillate fuel which, by definition, has a sulfur content of 0.5% or less by weight. Per 38 M.R.S. § 603-A(2)(A)(3), as of July 1, 2018, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm). Therefore, beginning July 1, 2018, the distillate fuel purchased or otherwise obtained for use in the asphalt batch plant shall not exceed 0.0015% by weight (15 ppm).

2. New Source Performance Standards

The portable Asphalt Batch Plant was manufactured in 1954 and is therefore not originally subject to the federal Environmental Protection Agency's (EPA) New Source Performance Standards (NSPS) *Standards of Performance for*

Hot Mix Asphalt Facilities, 40 Code of Federal Regulation (C.F.R.) Part 60, Subpart I. The installation of a new baghouse shall not increase emissions therefore Thibodeau is not subject to 40 C.F.R. Part 60, Subpart I.

3. Control Equipment

Emissions from the Asphalt Batch Plant shall be controlled by a new baghouse designed for a flow rate of 54,000 cfm.

4. Periodic Monitoring

The performance of the baghouse shall be monitored by either one of the following when the batch asphalt plant is operating:

- a. PM detector: When the detector signals excessive PM concentrations in the exhaust stream, Thibodeau shall take corrective action within 24 hours, or immediately if visible emissions exceed 20% opacity.
- b. Personnel with a current EPA 40 C.F.R. Part 60, Appendix A, Method 9 visible emissions certification: When visible emissions exceed 20% opacity, the hot mix asphalt plant is operating with insufficient control, and corrective action shall be taken immediately.

Thibodeau shall keep records of baghouse failures, baghouse maintenance, and baghouse inspections.

Thibodeau shall keep records of fuel use and tons of asphalt produced by the Asphalt Batch Plant which shall be maintained for at least six years and made available to the Department upon request. Records shall also be maintained recording the quantity and analyzed test results of all specification waste oil fired in the unit.

5. Contaminated Soils

Thibodeau may process up to 10,000 cubic yards per year of soil contaminated by gasoline or distillate fuel without prior approval from the Department. This limit may be exceeded with written authorization from the Department. Thibodeau shall notify the Department (regional inspector) at least 24 hours prior to processing the contaminated soil and specify the contaminating fuel and quantity, origin of the soil and fuel, and the disposition of the contaminated soil.

D. Annual Emissions

Total Annual Emissions

Thibodeau shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on 174,000 tons/year of hot mix asphalt produced.

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Asphalt Batch Plant	6.9	6.9	7.7	10.4	34.8	0.8
Generator #1	0.4	0.4	0.1	12.1	2.6	1.0
Boiler #1	0.8	0.8	3.1	1.9	0.3	0.1
Total TPY	8.1	8.1	10.9	24.4	37.7	1.9

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
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.

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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 amendment A-1045-71-E-M, subject to the conditions found in Air Emission License A-1045-71-C-R/M, in the amendment A-1045-71-D-A and 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.

SPECIFIC CONDITIONS

Replace Condition (16) in Air Emission License A-1045-71-C-R/M and amendment A-1045-71-D-A with the following:

(16) Asphalt Batch Plant (150 tons/hr)

A. Fuel Use

1. The Asphalt Batch Plant is licensed to fire distillate fuel, specification waste oil (not to exceed 0.7% sulfur by weight), and propane. [06-096 C.M.R. ch. 115, BPT]
2. Prior to July 1, 2018, distillate fuel fired at the facility shall not exceed a maximum sulfur content of 0.5% by weight. [06-096 C.M.R. ch. 115, BPT]
3. Beginning July 1, 2018, the facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 C.M.R. ch. 115, BPT]
4. Records of the type and amount of fuels used shall be kept on a monthly and 12-month rolling total basis. Fuel use records and receipts shall be maintained for at least 6 years and made available to the Department upon request. [06-096 C.M.R. ch. 115, BPT]

B. The annual throughput of the Asphalt Batch Plant shall not exceed 174,000 tons of asphalt per year on a 12-month rolling total basis. Records of asphalt

productions shall be kept on a monthly and 12-month rolling total basis. [06-096 C.M.R. ch. 115, BPT]

- C. Emissions from the Asphalt Batch Plant shall vent to a baghouse, and all components of the asphalt plant shall be maintained so as to prevent PM leaks. [06-096 C.M.R. ch. 115, BPT]
- D. The performance of the baghouse shall be monitored by either one of the following when the hot mix asphalt plant is operating [06-096 C.M.R. ch. 115, BPT]:
 - 1. PM detector: When the detector signals excessive PM concentrations in the exhaust stream, Thibodeau shall take corrective action within 24 hours, or immediately if visible emissions exceeds 20% opacity.
 - 2. Personnel with a current EPA Method 9 visible emissions certification: When visible emissions exceed 20% opacity, the asphalt plant is operating with insufficient control, and corrective action shall be taken immediately.
- E. To document maintenance of the baghouse, the licensee shall keep maintenance records recording the date and location of all bag failures as well as all routine maintenance and inspections. The maintenance and inspection records shall be kept on-site at the asphalt plant location. [06-096 C.M.R. ch. 115, BPT]
- F. Emissions from the asphalt plant baghouse shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Pollutant	grs/dscf	lb/hr
PM	0.03	11.9
PM ₁₀	-	11.9
SO ₂	-	13.2
NO _x	-	18.0
CO	-	60.1
VOC	-	1.23

- G. Visible emissions from the baghouse are limited to no greater than 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- H. General process emissions from the hot mix asphalt plant shall be controlled so as to prevent visible emissions in excess of 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

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- I. Thibodeau may process up to 10,000 cubic yards per year of soil contaminated by gasoline or distillate fuel without prior approval from the Department. This limit may be exceeded with written authorization from the Department. Thibodeau shall notify the Department (regional inspector) at least 24 hours prior to processing the contaminated soil and specify the contaminating fuel and quantity, origin of the soil and fuel, and the disposition of the contaminated soil. [06-096 C.F.R. 115, BPT]
- J. Thibodeau shall not process soils which are classified as hazardous waste or which have unknown contaminants. [06-096 C.M.R. ch. 115, BPT]
- K. When processing contaminated soils, Thibodeau shall maintain records which specify the quantity and type of contaminant in the soil as well as the origin and characterization of the contaminated soil. In addition, when processing contaminated soil, Thibodeau shall maintain records of processing temperature, asphalt feed rates, and dryer throughput on an hourly basis. The material shall be handled in accordance with the requirements of the Department's Bureau of Remediation and Waste Management. [06-096 C.M.R. ch. 115, BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 14 DAY OF April, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Marc Allen Robert Cove for
PAUL MERCER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-1045-71-C-R/M.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/6/2017

Date of application acceptance: 2/7/2017

Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins Bureau of Air Quality.

