

**Robert H. Brown Sand & Gravel, Inc.**  
**York County**  
**Kennebunkport, Maine**  
**A-930-71-A-N**

**Departmental**  
**Findings of Fact and Order**  
**Air Emission License**  
**After-the-Fact**

After review of the air emission license 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

Robert H. Brown Sand & Gravel, Inc. (RH Brown), located in Kennebunkport, Maine has applied for an Air Emission License, permitting the operation of an existing crushed stone and gravel facility.

B. Emission Equipment

**Rock Crushers:**

| <u>Designation</u>  | <u>Powered</u> | <u>Process Rate (tons/hour)</u> | <u>Control Device</u> | <u>Date of Manufacture</u> |
|---------------------|----------------|---------------------------------|-----------------------|----------------------------|
| Jaw Crusher         | Diesel         | 100                             | Spray nozzles         | 1950                       |
| Cone Crusher        | Diesel         | 50                              | Spray nozzles         | 1950                       |
| Brown Lenox Crusher | Diesel         | 200                             | Spray nozzles         | 1988                       |
| Eljay Crusher       | Diesel         | 200                             | Spray nozzles         | 1978                       |

**Diesel Units:**

| <u>Source ID</u> | <u>Max Capacity (MMBtu/hr)</u> | <u>Max Firing Rate (gal/hr)</u> | <u>Power Output</u> | <u>Fuel Type, % sulfur</u>                              |
|------------------|--------------------------------|---------------------------------|---------------------|---|
| 1957 CAT         | 1.78                           | 13.0                            | 156 kW              | Diesel fuel, 0.05%;<br>or diesel fuel and vegetable oil |
| 1994 CAT         | 2.56                           | 18.7                            | 225 kW              | Diesel fuel, 0.05%                                      |

RH Brown also operates a 2,000 gallon above-ground gasoline tank.

C. Application Classification

The application for RH Brown is classified as non-major based on the diesel emissions and the small, unquantifiable rock crusher emissions. The license is for a non-major source 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 Chapter 100 of the Department regulations. 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 Chapter 100 of the Air Regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Process Description

Aggregate is obtained from a pit located off-site. Oversize material is pre-crushed in the portable Brown Lenox Jaw Crusher about once a week. The material is transported by bucket loader to the secondary crusher. A grizzly removes oversize material for re-crushing in the jaw and the material passes through the secondary crusher. Conveyors transport the material to the tertiary Cone Crusher, where it is crushed to size and screened. Oversized pieces are returned to the tertiary crusher. Finished material is stockpiled for sale.

C. Rock Crushers

RH Brown operates four rock crushers. The Jaw Crusher is an 18 x 36 portable unit, manufactured about 1950 with a rated maximum raw material process rate of 100 tons/hour. The Cone Crusher is a 436 stationary cone, manufactured about 1950 with a rated capacity of 50 tons/hour. The Brown Lenox crusher is a portable unit that was manufactured in 1988 and operates with a rated capacity of 200 tons/hour. The Eljay Crusher is a 54" portable unit, manufactured in 1978 with a rated maximum raw process material rate of 200 tons/hour. The Eljay Crusher is not currently in service. The crushers are detailed in the table below:

| <b>Crusher name</b> | <b>Status</b>      | <b>Mfg. Date</b> | <b>Stationary or Portable?</b> | <b>Process Rate (tons/hour)</b> | <b>Subject to Subpart 000?</b> |
|---------------------|--------------------|------------------|--------------------------------|---------------------------------|--------------------------------|
| Jaw Crusher         | In use – secondary | ~1950            | Stationary                     | 100                             | Yes                            |
| Cone Crusher        | In use – tertiary  | ~1950            | Stationary                     | 50                              | Yes                            |
| Brown Lennox        | In use – primary   | 1988             | Portable                       | 200                             | Yes                            |
| Eljay Crusher       | Not in use         | 1978             | Portable                       | 200                             | Yes                            |

All four of the crushers are subject to EPA New Source Performance Standards (NSPS) Subpart OOO for Nonmetallic Mineral Processing Plants manufactured, reconstructed or modified after August 31, 1983, with capacities greater than 150 tons/hr for portable plants and greater than 25 tons/hr for non-portable plants. RH Brown shall complete a one-time performance test on each applicable crusher. The test shall demonstrate compliance with the opacity standards for the crushers and shall consist of a Method 9 Test per 40 CFR 60 Appendix A. The Method 9 Test shall be performed on each operational applicable crusher no later than 180 days of the spring 2006 start-up date. The performance test shall be performed on the Eljay Crusher within 180 days of its initial start-up. RH Brown shall keep documentation to show that each crusher has undergone the performance test for the life of the crushers.

The regulated pollutant from the rock crushers is particulate emissions. To meet the requirements of Best Practical Treatment (BPT) for control of particulate matter (PM) emissions from the rock crushers, RH Brown shall maintain water sprays on the rock crushers and operate as needed to control visible emissions. Visible emissions from the rock crushers shall be limited to no greater than 10% opacity on a 6-minute block average basis.

**D. Diesel Units**

RH Brown operates two diesel generators. The 1957 CAT is 1.78 MMBtu/hr unit, manufactured in 1957, which powers the stationary crushers. The 1994 CAT is rated at 2.56 MMBtu/hr and powers the portable Brown Lenox Jaw Crusher and the Eljay crusher when it is in use. The units fire diesel fuel with a maximum sulfur content of 0.05%. RH Brown plans to test the 1957 CAT running on used vegetable oil. If test results are positive, vegetable oil will become the primary fuel for the older generator.

Emissions from diesel engines firing vegetable oil are approximately equal to emissions from the firing diesel fuel.<sup>1</sup> (Studies show that vegetable oil emissions vary with changes in operating conditions and that the emissions are sometimes higher and sometimes lower than those from the combustion of diesel fuel.) Therefore the emission limits for the 1957 CAT are calculated based on the firing of diesel fuel.

A summary of the BACT analysis for the 1957 CAT (156 kW) and the 1994 CAT (225 kW) is the following:

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<sup>1</sup> A.L. Humke, N.J. Barsic, "Performance and Emissions Characteristics of a Naturally Aspirated Diesel Engine with Vegetable Oil Fuels" Parts 1 and 2, Society of Automotive Engineers, 1981.

1. The total facility fuel use for the generators shall not exceed 18,000 gallons/year of a combination of diesel fuel and vegetable oil.
2. Chapter 106 regulates fuel sulfur content, however in this case a BACT analysis for SO<sub>2</sub> determined a more stringent limit of 0.05% was appropriate and shall be used.
3. PM, NO<sub>x</sub>, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
4. Visible emissions from the 1957 CAT Generator shall not exceed 30% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.
5. Visible emissions from the 1994 CAT Generator shall not exceed 20% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.

**E. Gasoline Tank**

RH Brown operates an above-ground gasoline tank with a capacity of 2,000 gallons. Gasoline is transferred from the tank to vehicles used at the facility. The Gasoline Tank is subject to the requirements of MEDEP Chapter 118, Gasoline Dispensing Facilities Vapor Control. RH Brown shall not permit the transfer of gasoline into the Gasoline Tank unless the tank is equipped with a submerged fill pipe that extends into the storage tank to within six inches of the bottom of the tank. RH Brown shall also maintain records at the facility which will allow the monthly and annual throughput for the Gasoline Tank to be determined.

**F. Stock Piles and Roadways**

Visible emissions from fugitive emission sources shall not exceed 20% opacity, except for no more than 5-minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual 15-second opacity observations which exceed 20% in any 1-hour.

**G. Facility Emissions**

RH Brown shall be restricted to the following annual emissions, based on a 12 month rolling total:

**Total Licensed Annual Emissions for the Facility**  
(used to calculate the annual license fee)

|                  | <b>PM</b>   | <b>PM<sub>10</sub></b> | <b>SO<sub>2</sub></b> | <b>NO<sub>x</sub></b> | <b>CO</b>   | <b>VOC</b>  |
|------------------|-------------|------------------------|-----------------------|-----------------------|-------------|-------------|
| 1957 CAT         | 0.72        | 0.72                   | 0.12                  | 10.18                 | 2.20        | 0.81        |
| 1994 CAT         | 1.04        | 1.04                   | 0.18                  | 14.68                 | 3.17        | 1.17        |
| <b>Total TPY</b> | <b>1.76</b> | <b>1.76</b>            | <b>0.30</b>           | <b>24.86</b>          | <b>5.37</b> | <b>1.98</b> |

### **III. AMBIENT AIR QUALITY ANALYSIS**

According to the Maine Regulation Chapter 115, the level of air quality analyses required for a minor new 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.

#### **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-930-71-A-N 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. [MEDEP Chapter 115]
- (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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to 38 M.R.S.A. § 353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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.
- [MEDEP Chapter 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.
- [MEDEP Chapter 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. [MEDEP Chapter 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.
- [MEDEP Chapter 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. [MEDEP Chapter 115]

### **SPECIFIC CONDITIONS**

(16) **Rock Crushers**

- A. RH Brown shall install and maintain spray nozzles for particulate control on the Jaw Crusher, Cone Crusher and the Brown Lennox crusher, and on the Eljay Crusher should that unit become operational, and operate the water sprays as necessary to limit visible emissions to no greater than 10% opacity on a 6-minute block average basis. [MEDEP Chapters 115 (BACT) and 101]
- B. RH Brown shall maintain a log detailing the maintenance on the water spray nozzles. The maintenance log shall be kept on-site at the rock crushing location. [MEDEP Chapter 115, BACT]
- C. RH Brown shall maintain a log detailing and quantifying the hours of operation on a daily basis for all of the rock crushers. The operation log shall be kept on-site at the rock crushing location. [MEDEP Chapter 115, BACT]

(17) **New Source Performance Standards for rock crushers**

- A. The Jaw Crusher, Cone Crusher, Brown Lennox and Eljay Crusher are subject to 40 CFR Part 60 Subparts A and OOO and RH Brown shall comply with the notification and record keeping requirements of 40 CFR Part 60.676 and Part 60.7, except for Section (a)(2) of 60.7 per Subpart OOO, §60.676(h).
- B. RH Brown shall have an initial performance test performed on the applicable rock crushers per the applicable sections of 40 CFR Part 60, Subpart OOO, §60.675. This consists of a certified Method 9 observation. The performance test shall be completed within 60 days after achieving the maximum production rate at which the unit will be operated, but no later than 180 days after the spring 2006 startup of the units. RH Brown shall submit a test notice to the regional inspector at least 30 days prior to the performance test. Any rescheduled test requires a 7-day notice to the regional inspector. The address for the regional inspector is the following:

MEDEP Bureau of Air Quality  
ATTN: Southern Maine Regional Air Compliance Inspector  
312 Canco Road  
Portland ME 04103

(18) **Diesel Units**

- A. Total fuel use for the 1957 CAT and the 1994 CAT generators shall not exceed 18,000 gallons/year of a combination of diesel fuel and vegetable oil, with the sulfur content in the diesel fuel not to exceed 0.05% by weight. Compliance shall be based on fuel receipts showing the type and quantity of fuel delivered and the percent sulfur of the fuel. Records of fuel use shall be kept on an annual basis. [MEDEP Chapter 115, BACT]
- B. Emissions shall not exceed the following [MEDEP Chapter 115, BACT]:

| <b>Emission Unit</b> | <b>PM (lb/hr)</b> | <b>PM<sub>10</sub> (lb/hr)</b> | <b>SO<sub>2</sub> (lb/hr)</b> | <b>NO<sub>x</sub> (lb/hr)</b> | <b>CO (lb/hr)</b> | <b>VOC (lb/hr)</b> |
|----------------------|-------------------|--------------------------------|-------------------------------|-------------------------------|-------------------|--------------------|
| 1957 CAT             | 0.56              | 0.56                           | 0.10                          | 7.83                          | 1.69              | 0.63               |
| 1994 CAT             | 0.80              | 0.80                           | 0.14                          | 11.29                         | 2.44              | 0.90               |

- C. Visible emissions from the 1957 CAT Generator shall not exceed 30% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period. [MEDEP Chapter 101, BACT]
- D. Visible emissions from the 1994 CAT Generator shall not exceed 20% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period. [MEDEP Chapter 101]

(19) **Gasoline Tank**

- A. RH Brown shall not permit the transfer of gasoline into the Gasoline Tank unless the tank is equipped with a submerged fill pipe that extends to within six inches of the bottom of the tank. [MEDEP Chapter 118]
- B. RH Brown shall keep records of gasoline throughput which allow the monthly and annual throughput to be determined. Such records shall be maintained at the facility's premises for a minimum of three years. Copies of the records shall be provided to the Department and EPA on request. [MEDEP Chapter 118]
- C. RH Brown shall notify the Department of the monthly throughput from the tank if the monthly throughput of the Gasoline Tank ever exceeds 10,000 gallons/month. Such notification shall be made within 30 days of the throughput exceeding 10,000 gallons/month. [MEDEP Chapter 118]

(20) **Stockpiles and Roadways**

Visible emissions from fugitive emission sources shall not exceed 20% opacity, except for no more than five minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual 15-second opacity observations which exceed 20% in any one hour. [MEDEP Chapter 101]

(21) **Equipment Relocation** [MEDEP Chapter 115, BACT]

A. RH Brown shall notify the Bureau of Air Quality, by a written notification at least 48 hours prior to relocation of any equipment carried on this license. The notification shall be sent to the address below or to a Department Regional Office:

Attn: Relocation Notice  
Maine DEP  
Bureau of Air Quality  
17 State House Station  
Augusta, ME 04333-0017

The notification shall include the address of the equipment's new location, an identification of the equipment and the license number pertaining to the relocated equipment. Written notice may be sent by mail, facsimile (fax), or e-mail, or on-line by using the following web address:  
[www.maine.gov/dep/air/compliance/forms/relocation/](http://www.maine.gov/dep/air/compliance/forms/relocation/)

B. Written notification shall also be made to the municipality where the equipment will be relocated, except in the case of an unorganized territory where notification will be made to the respective county commissioners.

(22) RH Brown shall keep a copy of this Order on site, and have the operator(s) be familiar with the terms of this Order. [MEDEP Chapter 115, BACT]

(23) RH Brown 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 MRSA §605-C).

(24) **Payment of Fees**

RH Brown shall pay the annual air emission license fee within 30 days of February 28<sup>th</sup> of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

**Robert H. Brown Sand & Gravel, Inc.**  
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**A-930-71-A-N**

**Departmental**  
**Findings of Fact and Order**  
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DONE AND DATED IN AUGUSTA, MAINE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
DAVID P. LITTELL, COMMISSIONER

**The term of this license shall be five (5) years from the signature date above.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: October 24, 2005

Date of application acceptance: November 1, 2005

Date filed with the Board of Environmental Protection: \_\_\_\_\_

This Order prepared by Rachel E. Pilling, Bureau of Air Quality.