



DEPARTMENT ORDER

**Crooker Construction, LLC
Sagadahoc County
Topsham, Maine
A-187-71-O-A**

**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

Crooker Construction, LLC (Crooker) was issued Air Emission License A-187-71-M-R/A on April 9, 2018, for the operation of emission sources associated with their asphalt plant and crushed stone and gravel facility located at 103 Lewiston Road, Topsham, Maine. The license was subsequently amended on August 14, 2018 (A-187-71-N-M).

Crooker has requested an amendment to their license in order to add an additional rock crusher and corresponding engine.

B. Emission Equipment

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

Rock Crusher

| <u>Designation</u> | <u>Powered</u> | <u>Process Rate (tons/hour)</u> | <u>Date of Manufacture</u> | <u>Control Device</u> |
|--------------------|-----------------|-------------------------------------|--------------------------------|---------------------------|
| Metso Crusher #3 | Metso Engine #3 | 450 | 2016 | Spray Nozzles |

Engine

| <u>Unit ID</u> | <u>Max. Capacity (MMBtu/hr)</u> | <u>Max. Firing Rate (gal/hr)</u> | <u>Fuel Type, % sulfur</u> | <u>Date of Manuf.</u> |
|--------------------|-------------------------------------|--------------------------------------|--------------------------------|---------------------------|
| Metso Engine #3 | 2.17 | 15.5 | distillate fuel, 0.0015% | 2016 |

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.

Nonmetallic mineral processing plant. For the purposes of this license, *nonmetallic mineral processing plant* means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants (not including concrete batch plants), or any other facility processing nonmetallic minerals.

Portable Engine. For the purposes of this license, *portable engine* means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

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. The emissions increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

| <u>Pollutant</u> | <u>Current License (TPY)</u> | <u>Future License (TPY)</u> | <u>Net Change (TPY)</u> | <u>Significant Emissions Levels</u> |
|------------------|------------------------------|-----------------------------|-------------------------|-------------------------------------|
| PM | 5.2 | 5.2 | 0 | 100 |
| PM ₁₀ | 5.2 | 5.2 | 0 | 100 |
| SO ₂ | 12.2 | 12.2 | 0 | 100 |
| NO _x | 40.3 | 42.6 | 2.3 | 100 |

| Pollutant | Current License (TPY) | Future License (TPY) | Net Change (TPY) | Significant Emissions Levels |
|-------------------|----------------------------------|---------------------------------|-----------------------------|---|
| CO | 56.6 | 56.8 | 0.2 | 100 |
| VOC | 1.3 | 1.8 | 0.5 | 50 |
| CO ₂ e | <100,000 | <100,000 | <100,000 | 100,000 |

This modification is determined to be a minor modification 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. Nonmetallic Mineral Processing Plants

Metso Crusher #3 is a portable unit which was manufactured in 2016 and has a rated capacity of 450 tons/hr. The nonmetallic mineral processing plant also consists of other equipment associated with Metso Crusher #3, such as screens and belt conveyors.

1. BACT Findings

The regulated pollutant from nonmetallic mineral processing plants is particulate matter. To meet the requirements of BPT for control of particulate matter emissions, Crooker shall maintain water sprays on the nonmetallic mineral processing plant and operate as needed to control visible emissions.

2. New Source Performance Standards

The federal regulation *Standards of Performance for Nonmetallic Mineral Processing Plants*, 40 C.F.R. Part 60, Subpart OOO, applies to equipment at nonmetallic mineral processing plants with capacities greater than 25 ton/hr for fixed plants and 150 ton/hr for portable plants. The requirements of Subpart OOO apply to any crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, or enclosed truck or railcar loading station at a nonmetallic mineral processing

plant greater than the sizes listed above which commenced construction, modification, or reconstruction after August 31, 1983.

Metso Crusher #3 is part of a portable nonmetallic mineral processing plant with a maximum capacity of greater than 150 ton/hr and was manufactured after August 31, 1983. The crusher is therefore subject to 40 C.F.R. Part 60, Subpart OOO. [40 C.F.R. §§ 60.670(c) and (e)]

Requirements of 40 C.F.R. Part 60, Subpart OOO

a. Standards

Subpart OOO, Table 3 contains applicable visible emission requirements for Metso Crusher #3. This equipment is also subject to standards contained in the State rule *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101. The State requirements are determined to be more stringent. Therefore, the visible emission limit for this equipment has been streamlined to the State regulation. Visible emissions from Metso Crusher #3 shall be limited to no greater than 10% opacity on a six-minute block average basis.

Visible emissions from any nonmetallic mineral processing plant equipment, other than rock crushers, (including transfer points on belt conveyors, portable screens, etc.) which commenced construction, modification, or reconstruction, before April 22, 2008, shall not exceed 10% opacity on a six-minute block average basis. [40 C.F.R. Part 60, Subpart OOO, Table 3]

Visible emissions from any nonmetallic mineral processing plant equipment, other than rock crushers, (including transfer points on belt conveyors, portable screens, etc.) which commenced construction, modification, or reconstruction, on or after April 22, 2008, shall not exceed 7% opacity on a six-minute block average basis. [40 C.F.R. Part 60, Subpart OOO, Table 3]

b. Monitoring Requirements

Crooker shall maintain records detailing the maintenance on particulate matter control equipment including spray nozzles. Crooker shall perform monthly inspections of any water sprays to ensure water is flowing to the correct locations and initiate corrective action within 24 hours if water is found to not be flowing properly. Records of the date of each inspection and any corrective action required shall be included in the maintenance records. The maintenance records shall be kept on-site at the rock crushing location. [40 C.F.R. § 60.674(b)]

c. Testing Requirements

Subpart 000, § 60.675 requires that Crooker conduct an initial performance test for visible emissions from Metso Crusher #3 and from each piece of associated equipment subject to Subpart 000, potentially including any associated grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, and enclosed truck or railcar loading station.

Testing shall be completed in accordance with the following:

- (1) An initial performance test must 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 initial startup of the unit. If the initial performance test for a facility falls within a seasonal shutdown, then with approval from the Department, the initial performance test may be postponed until no later than 60 calendar days after resuming operation of the affected equipment. [40 C.F.R. § 60.672(b)]
- (2) Each performance test shall be done using the methods set forth in 40 C.F.R. Part 60, Subpart 000, § 60.675. [40 C.F.R. § 60.675(c)]
- (3) Crooker shall submit a test notice to the Department at least seven days prior to conducting a performance test. [40 C.F.R. § 60.675(g)]

d. Reporting and Recordkeeping Requirements

For the rock crushers and ancillary equipment subject to 40 C.F.R. Part 60, Subparts A and 000, Crooker shall comply with the notification and recordkeeping requirements of 40 C.F.R. §§ 60.676 and 60.7, except for § 60.7(a)(2) per 40 C.F.R. Subpart 000, § 60.676(h). [40 C.F.R. §§ 60.676(b), (f), and (i)]

C. Metso Engine #3

Metso Engine #3 is a portable engine used to power Metso Crusher #3. Metso Engine #3 has a maximum capacity of 2.17 MMBtu/hr (415 HP) and fires distillate fuel. The engine was manufactured in 2016 and is a CAT Engine Model C13. Crooker is currently licensed to fire a combined 27,000 gallons/year on a 12-month rolling total basis of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight). Metso Engine #3 will be included in this existing fuel use limit.

1. BACT Findings

The BACT emission limits for Metso Engine #3 were based on the following:

- PM, PM₁₀ - 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 4.41 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- VOC - 0.35 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- Visible Emissions - 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Metso Engine #3 are the following:

| <u>Unit</u> | <u>PM</u> <u>(lb/hr)</u> | <u>PM₁₀</u> <u>(lb/hr)</u> | <u>SO₂</u> <u>(lb/hr)</u> | <u>NO_x</u> <u>(lb/hr)</u> | <u>CO</u> <u>(lb/hr)</u> | <u>VOC</u> <u>(lb/hr)</u> |
|--|-----------------------------|--|---|---|-----------------------------|------------------------------|
| Metso Engine #3 (2.2 MMBtu/hr) Distillate fuel | 0.26 | 0.26 | -- | 9.57 | 2.06 | 0.76 |

Visible emissions from Metso Engine #3 shall not exceed 20% opacity on a six-minute block average basis.

2. New Source Performance Standards

Metso Engine #3 is considered a non-road engine, as opposed to a stationary engine, since Metso Engine #3 is portable and will be moved to various sites. Therefore, Metso Engine #3 is not subject to *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart III. [40 C.F.R. § 60.4200]

3. National Emission Standards for Hazardous Air Pollutants

Metso Engine #3 is considered a non-road engine, as opposed to a stationary engine, since Metso Engine #3 is portable and will be moved to various sites. Therefore, Metso Engine #3 is not subject to *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. The definition in 40 C.F.R. § 1068.30 states that a non-road engine is an internal combustion engine that meets certain criteria, including: "Portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform." 40 C.F.R. § 1068.30 further states that an engine is not a non-road engine if it remains or will remain at a location for

more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. An engine located at a seasonal source (a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year) is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. [40 C.F.R. § 63.6585]

D. Annual Emissions

Crooker shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on 275,000 tons/yr of asphalt throughput using the higher emission factor from either distillate fuel or natural gas, and a combined 27,000 gal/yr of distillate fuel fired in the Portable Diesel Generator, Pegson Engine, Metso Engines #1-#3, Finlay Screen Engine, Extex Screen Engine, Rawson Screen Engine, MGL Stacker Engine, and GeoTrek Stacker Engine:

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

| | PM | PM₁₀ | SO₂ | NO_x | CO | VOC |
|------------------|------------|------------------------|-----------------------|-----------------------|-------------|------------|
| Asphalt Plant | 5.0 | 5.0 | 12.1 | 34.4 | 55.0 | 1.1 |
| Engines | 0.2 | 0.2 | 0.1 | 8.2 | 1.8 | 0.7 |
| Total TPY | 5.2 | 5.2 | 12.2 | 42.6 | 56.8 | 1.8 |

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-187-71-O-A, subject to the conditions found in Air Emission License A-187-71-M-R/A, in amendment A-187-71-N-M, 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.

The following shall replace conditions (17) and (18) of Air Emission License A-187-71-M-R/A:

(17) Nonmetallic Mineral Processing Plants

- A. Crooker shall install and maintain spray nozzles for control of particulate matter on the nonmetallic mineral processing plants. [06-096 C.M.R. ch. 115, BACT/BPT]
- B. Crooker shall maintain records detailing and quantifying the hours of operation on a daily basis for all of the rock crushers. The operation records shall be kept on-site at the rock crushing location. [06-096 C.M.R. ch. 115, BACT/BPT]
- C. Visible emissions from the Primary, Secondary, and Tertiary Crushers, the Pegson Crusher, Portable Crusher #1, and Metso Crushers #1, #2, and #3 shall each be limited to no greater than 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101]
- D. NSPS Subpart OOO Requirements

Crooker shall comply with all requirements of 40 C.F.R. Part 60, Subpart OOO applicable to each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, and enclosed truck or railcar loading station.

- 1. Visible emissions from any nonmetallic mineral processing plant equipment, other than rock crushers, (including transfer points on belt conveyors, portable screens, etc.) which commenced construction, modification, or reconstruction, before April 22, 2008, shall not exceed 10% opacity on a six-minute block average basis. [40 C.F.R. Part 60, Subpart OOO, Table 3]
- 2. Visible emissions from any nonmetallic mineral processing plant equipment, other than rock crushers, (including transfer points on belt conveyors, portable screens, etc.) which commenced construction, modification, or reconstruction, on or after April 22, 2008, shall not exceed 7% opacity on a six-minute block average basis. [40 C.F.R. Part 60, Subpart OOO, Table 3]
- 3. Crooker shall maintain records detailing the maintenance on particulate matter control equipment (including spray nozzles). Crooker shall perform monthly inspections of any water sprays to ensure water is flowing to the correct locations and initiate corrective action within 24 hours if water is found to not be flowing properly. Records of the date of each inspection and any corrective action required shall be included in the maintenance records. The maintenance records shall be kept on-site at the rock crushing location. [06-096 C.M.R. ch. 115, BACT/BPT and 40 C.F.R. § 60.674(b)]

4. Crooker shall either have an initial performance test performed on Metso Crushers #1-#3 and ancillary equipment, as applicable, per the applicable sections of 40 C.F.R. § 60.675 or provide documentation to the Department that the initial performance test was previously performed. [06-096 C.M.R. ch. 115, BACT/BPT and 40 C.F.R. § 60.675(c)]
5. An initial performance test must 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 initial startup of the unit. If the initial performance test for a facility falls within a seasonal shutdown, then with approval from the Department, the initial performance test may be postponed until no later than 60 calendar days after resuming operation of the affected equipment. [40 C.F.R. § 60.672(b) and 06-096 C.M.R. ch. 115, BACT/BPT]
6. Crooker shall submit a test notice to the Department and the EPA at least seven days prior to conducting a performance test. [06-096 C.M.R. ch. 115, BACT/BPT and 40 C.F.R. § 60.675(g)]
7. For the rock crushers and ancillary equipment subject to 40 C.F.R. Part 60, Subparts A and OOO, Crooker shall comply with the notification and recordkeeping requirements of 40 C.F.R. §§ 60.676 and 60.7, except for § 60.7(a)(2) per §60.676(h). [40 C.F.R. §§ 60.676(b), (f), and (i)]

(18) Engines

A. Fuel Use

1. The Portable Diesel Generator, Pegson Engine, Metso Engines #1 - #3, Finlay Screen Engine, Extec Screen Engine, Rawson Screen Engine, MGL Stacker Engine, and GeoTrek Stacker Engine are licensed to fire distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight). [06-096 C.M.R. ch. 115, BACT/BPT]
2. Total combined fuel use for the Portable Diesel Generator, Pegson Engine, Metso Engines #1 - #3, Finlay Screen Engine, Extec Screen Engine, Rawson Screen Engine, MGL Stacker Engine, and GeoTrek Stacker Engine shall not exceed 27,000 gal/yr of distillate fuel. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of fuel delivered. Records of annual fuel use shall be kept on a monthly and 12-month rolling total basis. [06-096 C.M.R. ch. 115, BACT/BPT]

B. Emissions shall not exceed the following:

| <u>Unit</u> | <u>Pollutant</u> | <u>lb/MMBtu</u> | <u>Origin and Authority</u> |
|---------------------------|------------------|-----------------|--------------------------------------|
| Portable Diesel Generator | PM | 0.12 | 06-096 C.M.R. ch. 103 § (2)(B)(1)(a) |

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT/BPT]:

| <u>Unit</u> | <u>PM (lb/hr)</u> | <u>PM₁₀ (lb/hr)</u> | <u>SO₂ (lb/hr)</u> | <u>NO_x (lb/hr)</u> | <u>CO (lb/hr)</u> | <u>VOC (lb/hr)</u> |
|--|-------------------|--------------------------------|-------------------------------|-------------------------------|-------------------|--------------------|
| Portable Diesel Generator (8.8 MMBtu/hr) Distillate fuel | 1.06 | 1.06 | 0.01 | 28.16 | 7.48 | 0.79 |
| Pegson Engine (2.63 MMBtu/hr) Distillate fuel | 0.32 | 0.32 | -- | 11.60 | 2.50 | 0.92 |
| Metso Engine #1 (1.42 MMBtu/hr) Distillate fuel | 0.17 | 0.17 | -- | 6.26 | 1.35 | 0.50 |
| Metso Engine #2 (2.17 MMBtu/hr) Distillate fuel | 0.26 | 0.26 | -- | 9.57 | 2.06 | 0.76 |
| Metso Engine #3 (2.17 MMBtu/hr) Distillate fuel | 0.26 | 0.26 | -- | 9.57 | 2.06 | 0.76 |
| Finlay Screen Engine (1.0 MMBtu/hr) Distillate fuel | 0.12 | 0.12 | -- | 4.41 | 0.95 | 0.35 |
| Extec Screen Engine (0.55 MMBtu/hr) Distillate fuel | 0.07 | 0.07 | -- | 2.43 | 0.52 | 0.19 |
| Rawson Screen Engine (0.59 MMBtu/hr) Distillate fuel | 0.07 | 0.07 | -- | 2.60 | 0.56 | 0.21 |
| MGL Stacker Engine (0.59 MMBtu/hr) Distillate fuel | 0.07 | 0.07 | -- | 2.60 | 0.56 | 0.21 |
| GeoTrek Stacker Engine (0.51 MMBtu/hr) Distillate fuel | 0.06 | 0.06 | -- | 2.25 | 0.48 | 0.18 |

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11

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D. Visible emissions from each engine shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT/BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 25 DAY OF September, 2018.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Core for
PAUL MERCER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-187-71-M-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: August 27, 2018

Date of application acceptance: August 29, 2018

Date filed with the Board of Environmental Protection:

This Order prepared by Benjamin Goundie, Bureau of Air Quality.

