



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: April 8, 2013

RE: Babcock Paving, Inc. / 073-32549-00041

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot12/03/07



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**Federally Enforceable State Operating Permit
Renewal and New Source Review
OFFICE OF AIR QUALITY**

**Babcock Paving, Inc.
6049 Work Street
DeMotte, Indiana 46310**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-8-11.1, applicable to those conditions

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation, or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No. F073-32549-00041	
Issued by:  Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 8, 2013 Expiration Date: April 8, 2023

TABLE OF CONTENTS

A. SOURCE SUMMARY	5
A.1 General Information [326 IAC 2-8-3(b)]	
A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]	
A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(l)]	
A.4 FESOP Applicability [326 IAC 2-8-2]	
B. GENERAL CONDITIONS	8
B.1 Definitions [326 IAC 2-8-1]	
B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]	
B.3 Term of Conditions [326 IAC 2-1.1-9.5]	
B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]	
B.5 Severability [326 IAC 2-8-4(4)]	
B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]	
B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]	
B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]	
B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]	
B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]	
B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]	
B.12 Emergency Provisions [326 IAC 2-8-12]	
B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]	
B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]	
B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]	
B.16 Permit Renewal [326 IAC 2-8-3(h)]	
B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]	
B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]	
B.19 Source Modification Requirement [326 IAC 2-8-11.1]	
B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2] [IC 13-30-3-1]	
B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]	
B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16] [326 IAC 2-1.1-7]	
B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]	
C. SOURCE OPERATION CONDITIONS	17
Emission Limitations and Standards [326 IAC 2-8-4(1)]	
C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]	
C.2 Overall Source Limit [326 IAC 2-8]	
C.3 Opacity [326 IAC 5-1]	
C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]	
C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]	
C.6 Fugitive Dust Emissions [326 IAC 6-4]	
C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]	
C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]	
Testing Requirements [326 IAC 2-8-4(3)]	
C.9 Performance Testing [326 IAC 3-6]	
Compliance Requirements [326 IAC 2-1.1-11]	
C.10 Compliance Requirements [326 IAC 2-1.1-11]	

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

- C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]
- C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)]
[326 IAC 2-8-5(1)]

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

- C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.14 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]
- C.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]
- C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4]
[326 IAC 2-8-5]

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

- C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]
- C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

Stratospheric Ozone Protection

- C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

D.1. EMISSIONS UNIT OPERATION CONDITIONS - HMA Plant, RAP Screener, & HOH..... 24

Emission Limitations and Standards [326 IAC 2-8-4(1)]

- D.1.1 PSD Minor Limit: PM [326 IAC 2-2]
- D.1.2 FESOP & PSD Minor Limits: PM10, PM2.5, SO2, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2]
[326 IAC 8-1-6]
- D.1.3 FESOP & PSD Minor Limits: SO2 and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]
- D.1.4 Particulate Emission Limits [326 IAC 6-2]
- D.1.5 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1] [326 IAC 7-2-1]
- D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements

- D.1.7 Particulate Control (PM/PM10/PM2.5)
- D.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]
- D.1.9 Sulfur Dioxide (SO2) Emissions and Sulfur Content
- D.1.10 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content
- D.1.11 Multiple Fuel and Slag Usage Limitations
- D.1.12 Shingle Asbestos Content

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

- D.1.13 Visible Emissions Notations
- D.1.14 Parametric Monitoring
- D.1.15 Broken or Failed Bag Detection

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

- D.1.16 Record Keeping Requirements
- D.1.17 Reporting Requirements

D.2. EMISSIONS UNIT OPERATION CONDITIONS: Cold-mix Asphalt Production & Storage..... 34

Emission Limitations and Standards [326 IAC 2-8-4(1)]

- D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]
- D.2.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2]

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

- D.2.3 Record Keeping Requirements
- D.2.4 Reporting Requirements

E.1. NSPS REQUIREMENTS: HMA Plant..... 37

New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]

- E.1.1 General Provisions Relating to the New Source Performance Standards (NSPS) for Hot-mix Asphalt Facilities (40 CFR 60, Subpart I), [326 IAC 12] [40 CFR Part 60, Subpart A]
- E.1.2 New Source Performance Standards (NSPS) for Hot-mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12-1]
- E.1.3 Testing Requirements [40 CFR Part 60, Subpart I] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)] [326 IAC 2-1.1-11]

E.2. NESHAPs REQUIREMENTS: Generators 39

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-6.1-5(a)(1)]

- E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants (NESHAPs) under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]
- E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) [40 CFR 63, Subpart ZZZZ] [326 IAC 20]

Certification Form 41

Emergency Occurrence Form 42

FESOP Quarterly Report Form 44

Quarterly Deviation and Compliance Monitoring Report Form 48

Fugitive Dust Plan Attachment A

NSPS Subpart I - Standards of Performance for Hot-mix Asphalt Facilities Attachment B

NESHAP Subpart ZZZZ - Standards for Stationary RICE Attachment C

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation. Blast furnace slag, electric arc furnace steel mill slag, and/or asbestos-free recycled shingles are processed in the aggregate mix. This source does not crush recycled asphalt pavement (RAP) or grind any kind of recycled asphalt shingles (RAS), asbestos-free or otherwise, on-site.

Source Address:	6049 Work Street, DeMotte, Indiana 46310
General Source Phone Number:	(219) 987-5450
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
County Location:	Jasper
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
 - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
 - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and

- (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
 - (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
 - (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
 - (B) Three (3) feeder conveyors;
 - (C) One (1) screen deck; and
 - (D) One (1) aggregate bucket elevator;
 - (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
 - (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
 - (A) one (1) feeder bin;
 - (B) one (1) 30 foot feeder belt;
 - (C) One (1) screen deck; and
 - (D) Three (3) stacking conveyors;
- Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.
- (5) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and
 - (6) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

- (d) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

- (a) One (1) hot oil heater, identified as EU-04, constructed in 2008, with a maximum heat input capacity of 1.25 million British thermal units per hour (MMBtu/hr), firing natural gas or No. 2 fuel as available, uncontrolled and exhausting through stack S4. [326 IAC 6-2]
- (b) Two (2) 25,000 gallon liquid asphalt storage tanks, identified as Tank A and Tank B, constructed in 2008, uncontrolled and exhausting to the atmosphere;

- (c) Two (2) 15,000 gallon fuel oil storage tanks, identified as Tank C and Tank D, constructed in 2008, uncontrolled and exhausting to the atmosphere;
- (d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thousand (230,000) gallons per month;
- (e) One (1) 20.5 hp gasoline-fired, spark ignition, 4-stroke lean burn, portable maintenance welding unit, manufactured in 1995 and constructed in 1995, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (f) One (1) 8.0 hp gasoline-fired, spark ignition, portable emergency generator, identified as the "back-up" generator, manufactured in 1999 and constructed in 2000, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (g) Combustion source flame safety purging on startup;
- (h) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;
- (i) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (j) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.
- (k) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;
- (l) Cleaners and solvents characterized as follows:
 - (1) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 °C (100 °F) or;
 - (2) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 °C (68 °F); the use of which for all cleaners and solvents combined does not exceed one hundred forty-five (145) gallons per twelve (12) months;
- (m) Portable containers used for the collection, storage, or disposal of materials provided the container capacity is equal to or less than forty-six hundredths (0.46) cubic meters (121.5 gallons) and the container is closed, except when the material is added or removed.
- (n) Closed loop heating and cooling systems;
- (o) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment; and
- (p) Paved and unpaved roads with limited public access [326 IAC 6-4, 326 IAC 6-5, 326 IAC 2-8]

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

- (a) This permit, F073-32549-00041, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

-
- (a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

- (1) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and
 - (2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
 - (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

- (a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

- (b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

- (c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Emergency Provisions [326 IAC 2-8-12]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
 - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
 - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
 - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to F073-32549-00041 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

**B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]**

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
- (1) That this permit contains a material mistake.
 - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
 - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.16 Permit Renewal [326 IAC 2-8-3(h)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:

- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
- (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

- (b) Emission Trades [326 IAC 2-8-15(b)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(b).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.19 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

- (a) Pursuant to 326 IAC 2-8:
 - (1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
 - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
 - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
 - (4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per twelve (12) consecutive month period.
- (b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.
- (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4, or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the attached plan as in Attachment A.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolitions start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Licensed Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

C.9 Performance Testing [326 IAC 3-6]

- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.10 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.14 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

- (a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown, or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable response steps taken.

C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline

- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application.
 - (1) Support information includes the following:
 - (A) All calibration and maintenance records.
 - (B) All original strip chart recordings for continuous monitoring instrumentation.
 - (C) Copies of all reports required by the FESOP.
 - (2) Records of required monitoring information include the following:
 - (A) The date, place, as defined in this permit, and time of sampling or measurements.
 - (B) The dates analyses were performed.
 - (C) The company or entity that performed the analyses.
 - (D) The analytical techniques or methods used.
 - (E) The results of such analyses.
 - (F) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

- (b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to

an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

- (b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Hot-Mix Asphalt (HMA) Plant, RAP Screener, and Hot Oil Heater (HOH)

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
 - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
 - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and
 - (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
 - (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
 - (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
 - (B) Three (3) feeder conveyors;
 - (C) One (1) screen deck; and
 - (D) One (1) aggregate bucket elevator;
 - (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
 - (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
 - (A) one (1) feeder bin;
 - (B) one (1) 30 foot feeder belt;

- (C) One (1) screen deck; and
- (D) Three (3) stacking conveyors;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (5) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and
- (6) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

Insignificant Activities

- (a) One (1) hot oil heater, identified as EU-04, constructed in 2008, with a maximum heat input capacity of 1.25 million British thermal units per hour (MMBtu/hr), firing natural gas or No. 2 fuel as available, uncontrolled and exhausting through stack S4. [326 IAC 6-2]
- (p) Paved and unpaved roads with limited public access [326 IAC 6-4, 326 IAC 6-5, 326 IAC 2-8]

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 PSD Minor Limit: PM [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable;

- (a) The amount of hot-mix asphalt processed shall not exceed 975,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month; and
- (b) PM emissions from the dryer/mixer shall not exceed 0.380 pounds per ton of asphalt processed.
- (c) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.2 FESOP & PSD Minor Limits: PM10, PM2.5, SO2, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-7 and 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

- (a) The amount of hot-mix asphalt processed shall not exceed 975,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM10 emissions from the dryer/mixer shall not exceed 0.160 pounds per ton of asphalt processed.

- (c) The PM_{2.5} emissions from the dryer/mixer shall not exceed 0.179 pounds per ton of asphalt processed.
- (d) SO₂ emissions from the dryer/mixer shall not exceed 0.058 pounds per ton of asphalt processed.
- (e) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.
- (f) CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.
- (g) The Permittee shall control PM₁₀ and PM_{2.5} emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

Compliance with these limits, combined with the potential to emit PM₁₀, PM_{2.5}, SO₂, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM₁₀, PM_{2.5}, SO₂, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Additionally, compliance with the limit in Condition D.1.2(e) shall limit the VOC emissions from the dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

D.1.3 FESOP & PSD Minor Limits: SO₂ and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-7, 326 IAC 2-2, and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following:

- (a) Fuel and Slag Specifications
 - (1) The sulfur content of the No. 2 fuel oil shall not exceed 0.50% by weight.
 - (2) The sulfur content of the No. 4 fuel oil shall not exceed 0.50% by weight.
 - (3) The sulfur content of the waste fuel oil shall not exceed 0.75% by weight.
 - (4) The waste oil combusted shall not contain more than 0.947% ash, 0.200% chlorine, and 0.0089% lead.
 - (5) The HCl emissions shall not exceed 0.0132 pounds of HCl per gallon of waste oil burned.
 - (6) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
 - (7) The SO₂ emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of Blast Furnace slag processed in the aggregate mix.
 - (8) The sulfur content of the steel slag shall not exceed 0.66% by weight.
 - (9) The SO₂ emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of Steel slag processed in the aggregate mix.
- (b) Single Fuel and Slag Usage Limitations:
 - (1) When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel shall be limited as follows:

- (A) Natural gas usage shall not exceed 657 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (B) No. 2 fuel oil usage shall not exceed 2,075,246 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (C) No. 4 fuel oil usage shall not exceed 1,964,567 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (D) Waste oil usage shall not exceed 1,336,440 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

Note: The source is only permitted to burn the above-listed fuels.

- (2) Blast furnace slag usage shall not exceed 50,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (c) Multiple Fuel and Slag Usage Limitations:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer shall be limited as follows:
 - (1) SO₂ emissions shall not exceed 92.17 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (2) HCl emissions shall not exceed 8.82 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (d) Asphalt Shingle Usage Limitation
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix.

Compliance with these limits, combined with the potential to emit SO₂ and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO₂ to less than 100 tons per twelve (12) consecutive month period, each, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

D.1.4 Particulate Emission Limits [326 IAC 6-2]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the hot oil heater, identified as EU-04, shall not exceed six tenths (0.6) pounds of particulate matter per MMBtu heat input.

D.1.5 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1] [326 IAC 7-2-1]

- (a) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), the Permittee shall comply with the following:

- (1) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per MMBtu when using distillate oil.
- (2) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed one and six tenths (1.6) pounds per MMBtu heat input when using residual oil.

Note: No. 2 fuel oil and No. 4 fuel oil are each considered distillate oils, and waste oil is considered residual oil.

- (b) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities and any corresponding control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.7 Particulate Control (PM/PM10/PM2.5)

- (a) In order to comply with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

- (a) In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the Permittee shall perform PM, PM10, and PM2.5 testing of the dryer/mixer not later than five (5) years from the most recent valid compliance demonstration, utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable particulate matter.
- (b) In order to demonstrate compliance with Condition D.1.3(a)(6), when using blast furnace slag, the Permittee shall perform SO₂ testing for the aggregate dryer not later than one hundred eighty (180) days of initial use of blast furnace slag in the aggregate mix, utilizing methods as approved by the Commissioner. Testing shall only be performed if the company has not previously performed SO₂ testing while using blast furnace slag in the aggregate mix at one of their other Indiana facilities. Testing shall be conducted in accordance with Section C- Performance Testing. Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.1.9 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

Fuel Oil

- (a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1), D.1.3(a)(2), D.1.5(a), and D.1.5(b) shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), and 326 IAC 3-7-4 (Fuel oil sampling; analysis methods), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
 - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 75.0 MMBtu/hr dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.

Blast Furnace Slag

- (b) Compliance with the blast furnace slag limitation established in Condition D.1.3(a)(5) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of Blast Furnace slag delivered; or
 - (2) Analyzing a sample of each blast furnace slag delivery, if no vendor analyses or certifications are available, to determine the sulfur content of the Blast Furnace slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
 - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 75.0 MMBtu/hr dryer burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.

Steel Slag

- (c) Compliance with the steel slag limitations established in Condition D.1.3(a)(7) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of slag delivered; or

- (2) Analyzing a sample of the Steel slag delivery if no vendor analyses or certifications are available, at least once per quarter, to determine the sulfur content of the Steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
- (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 75.0 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

A determination of noncompliance pursuant to any of the methods specified in (1) or (2) above shall not be refuted by evidence of compliance pursuant to the other method.

D.1.10 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content

The Permittee shall demonstrate compliance with the waste oil ash, chlorine, and lead content limits established in Condition D.1.3(a)(3), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

D.1.11 Multiple Fuel and Slag Usage Limitations

In order to comply with the Condition D.1.3(c), when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, the Permittee shall limit fuel and slag usage according to the following formulas:

(a) Sulfur Dioxide (SO₂) Emission Calculation

$$S = \frac{G(E_G) + O(E_O) + F(E_F) + W(E_W) + B(E_B) + T(E_T)}{2,000 \text{ lbs/ton}}$$

where:

S = tons of sulfur dioxide emissions for a 12-month consecutive period

G = million cubic feet of natural gas used in the last 12 months

O = gallons of No. 2 fuel oil used in the last 12 months

F = gallons of No. 4 fuel oil used in the last 12 months

W = gallons of waste oil used in the last 12 months

B = tons of blast furnace slag used in the last 12 months

T = tons of steel slag used in the last 12 months

E_G = 0.6 lbs/MMCF of natural gas

E_O = 0.071 lbs/gallon of No. 2 fuel oil

E_F = 0.075 lbs/gallon of No. 4 fuel oil

E_W = 0.1103 lbs/gallon of waste oil

E_B = 0.74 lbs/ton of blast furnace slag used

E_T = 0.0014 lbs/ton of steel slag used

(b) Hydrogen Chloride (HCl) Emission Calculation:

$$HCl = \frac{W(E_W)}{2000 \text{ lbs/ton}}$$

where:

HCl = tons of hydrogen chloride emissions for a 12-month consecutive period

W = gallons of waste oil used in the last 12 months.

E_W = 0.0132 lbs/gallon of waste oil.

D.1.12 Shingle Asbestos Content

Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.3(d) shall be determined utilizing one of the following options:

- (1) Providing shingle supplier certification that the factory seconds and/or post consumer waste shingles do not contain asbestos; or
- (2) Analyzing a sample of the recycled asphalt shingles (factory seconds and/or post consumer waste, only) delivery to determine the asbestos content of the recycled asphalt shingles, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A determination of noncompliance pursuant to any of the methods specified above shall not be refuted by evidence of compliance pursuant to the other method.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.1.13 Visible Emissions Notations

- (a) Visible emission notations of the conveyors, screens, material transfer points, and the dryer/mixer stack (S1) exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. An abnormal visible emission notation is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.1.14 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer, at least once per day when the dryer/mixer is in operation. When, for any one reading, the pressure drop across the baghouse is outside of the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between three (3.0) and six (6.0) inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.1.15 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event

qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces, or triboflows.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.16 Record Keeping Requirements

- (a) To document the compliance status with Conditions D.1.1(a), and D.1.2(a), the Permittee shall keep monthly records of the amount of asphalt processed through the dryer/mixer.
- (b) To document the compliance status with Conditions D.1.3, D.1.5, D.1.9, D.1.10, D.1.11, and D.1.12, the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.3, D.1.5, D.1.9, D.1.10, D.1.11, and D.1.12.
- (1) Calendar dates covered in the compliance determination period;
 - (2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide (SO₂) emission rates for each fuel used at the source since the last compliance determination period;
 - (3) Actual waste oil usage, ash, chlorine, and lead content, and equivalent hydrogen chloride (HCl) emission rate for waste oil used at the source since the last compliance determination period;
 - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
 - (5) If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
 - (A) Fuel supplier certifications;
 - (B) The name of the fuel supplier; and
 - (C) A statement from the fuel supplier that certifies the sulfur content of the No. 2 fuel oil, the No. 4 fuel oil, and the waste oil, and the ash, chlorine, and lead content of the waste oil.
 - (6) Actual blast furnace and steel slag usage, sulfur content, and equivalent sulfur dioxide emission rates for all blast furnace and steel slag used at the source since the last compliance determination period;

- (7) A certification, signed by the owner or operator, that the records of the blast furnace and steel slag supplier certifications represent all of the blast furnace and steel slag used during the period; and
- (8) If the slag supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
 - (A) Blast furnace and steel slag supplier certifications;
 - (B) The name of the blast furnace and steel slag supplier; and
 - (C) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.
- (9) A certification, signed by the owner or operator, that the records of the shingle supplier certifications represent all of the shingles used during the period; and
- (10) If the shingle supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:
 - (A) Shingle supplier certifications;
 - (B) The name of the shingle supplier(s); and
 - (C) A statement from the shingle supplier(s) that certifies the asbestos content of the shingles from their company.
- (d) To document the compliance status with Condition D.1.13, the Permittee shall maintain records of visible emission notations of the conveyors, screens, material transfer points, and dryer/mixer stack (S1) exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).
- (e) To document the compliance status with Condition D.1.14, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.17 Reporting Requirements

Quarterly summaries of the information to document compliance status with Conditions D.1.1(a), D.1.2(a), and D.1.3, shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Cold-mix Asphalt (CMA) Production & Storage

(c) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-5-2]

Pursuant to 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving), the use of cutback asphalt or asphalt emulsion shall not contain more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:

- (a) Penetrating prime coating
- (b) Stockpile storage
- (c) Application during the months of November, December, January, February, and March.

D.2.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, the Permittee shall comply with the following:

- (a) VOC emissions from the sum of the liquid binders (cutback asphalt and/or asphalt emulsions) shall not exceed 52.50 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
 - (1) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95.0% by weight of VOC solvent evaporating.
 - (2) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70.0% by weight of VOC solvent evaporating.
 - (3) Cut back asphalt slow cure, containing a maximum of 20.0% of the liquid binder by weight of VOC solvent and 25.0% by weight of VOC solvent evaporating.
 - (4) Emulsified asphalt with solvent, containing a maximum of 15.0% of liquid binder by weight of VOC solvent and 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume.
 - (5) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.
- (c) When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:

- (1) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 55.26 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (2) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 75.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (3) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 210.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (4) The amount of VOC solvent used in emulsified asphalt shall not exceed 113.15 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (5) The amount of VOC solvent used in all other asphalt shall not exceed 2,100.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (d) When using more than one liquid binder (asphalt emulsion) per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
- (1) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows.

$$\text{VOC emitted (tons/yr)} = \frac{\text{VOC solvent used for each binder (tons/yr)}}{\text{Adjustment Factor}}$$

Type of Binder	Adjustment Factor
Cutback Asphalt Rapid Cure	1.053
Cutback Asphalt Medium Cure	1.429
Cutback Asphalt Slow Cure	4.000
Emulsified Asphalt	2.155
Other Asphalt	40.0

Compliance with these limits, combined with the potential to emit VOCs and HAPs from all other emission units at this source, will limit source-wide VOC emissions to less than one hundred (100) tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.2.3 Record Keeping Requirements

- (a) To document the compliance status with Condition D.2.2, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken

monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.2.

- (1) Calendar dates covered in the compliance determination period;
- (2) Actual asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
- (3) Actual VOC solvent content by weight of the asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
- (4) Actual amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.

Records may include delivery tickets, manufacturer's data, material safety data sheets (MSDS), and other documents necessary to verify the type and amount used. Test results of ASTM tests for asphalt cutback and asphalt emulsion may be used to document volatilization.

- (b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.2.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.2.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION E.1

NSPS REQUIREMENTS

Emissions Unit Description: Hot-Mix Asphalt (HMA) Plant

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
 - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
 - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and
 - (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
 - (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
 - (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
 - (B) Three (3) feeder conveyors;
 - (C) One (1) screen deck; and
 - (D) One (1) aggregate bucket elevator;
 - (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
 - (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
 - (A) one (1) feeder bin;
 - (B) one (1) 30 foot feeder belt;
 - (C) One (1) screen deck; and

(D) Three (3) stacking conveyors;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(5) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and

(6) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR 60, Subpart I.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 New Source Performance Standards (NSPS) for Hot-mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart I (included as Attachment B of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart I:

(a) 40 CFR 60.90

(b) 40 CFR 60.91

(c) 40 CFR 60.92

(d) 40 CFR 60.93

E.1.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

Not later than five (5) years from the most recent compliant stack test, in order to demonstrate compliance with Condition E.1.2, the Permittee shall perform the stack testing required under NSPS 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

SECTION E.2

NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: Generators

- (b) Material handling and conveying operations, consisting of the following:
- (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
- (A) one (1) feeder bin;
 - (B) one (1) 30 foot feeder belt;
 - (C) One (1) screen deck; and
 - (D) Three (3) stacking conveyors;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

Insignificant Activities

- (e) One (1) 20 hp gasoline-fired, spark ignition, 4-stroke lean burn, portable maintenance welding unit, manufactured in 1995 and constructed in 1995, uncontrolled and exhausting to the atmosphere;
- Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.
- (f) One (1) 8 hp gasoline-fired, spark ignition, portable emergency generator, identified as the "back-up" generator, manufactured in 1999 and constructed in 2000, uncontrolled and exhausting to the atmosphere;
- Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAPs) Requirements [326 IAC 2-8-4(1)]

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

- (a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the source, as specified in Table 8 of 40 CFR Part 63, Subpart ZZZZ.
- (b) Pursuant to 40 CFR 63.12, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]

Pursuant to 40 CFR Part 60, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart ZZZZ (4Z) (included as Attachment C), which are incorporated by reference as 326 IAC 20-82, for the following generators:

(a) One (1) 100.0 hp diesel fuel-fired, portable RAP Screening Unit, identified as RC2, with a compliance date of May 3, 2013, as follows:

- | | | | |
|-----|-------------------------------------|------|-----------------------------------|
| (1) | 40 CFR 63.6580; | (8) | 40 CFR 63.6640; |
| (2) | 40 CFR 63.6585(a), (c), (d); | (9) | 40 CFR 63.6655(a), (b), (d), (e); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) | 40 CFR 63.6660 |
| (4) | 40 CFR 63.6595(a)(1), (b), (c); | (11) | 40 CFR 63.6665 |
| (5) | 40 CFR 63.6603(a); | (12) | 40 CFR 63.6670 |
| (6) | 40 CFR 63.6605; | (13) | 40 CFR 63.6675 |
| (7) | 40 CFR 63.6625(e)(4), (h), (i); | (14) | Tables 2d and 8. |

(b) One (1) 20 hp gasoline-fired spark ignition, 4-stroke lean burn, portable maintenance welding unit, with a compliance date of October 19, 2013, as follows:

- | | | | |
|-----|-------------------------------------|------|-----------------------------------|
| (1) | 40 CFR 63.6580; | (8) | 40 CFR 63.6640; |
| (2) | 40 CFR 63.6585(a), (c), (d); | (9) | 40 CFR 63.6655(a), (b), (d), (e); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) | 40 CFR 63.6660 |
| (4) | 40 CFR 63.6595(a)(1), (b), (c); | (11) | 40 CFR 63.6665 |
| (5) | 40 CFR 63.6603(a); | (12) | 40 CFR 63.6670 |
| (6) | 40 CFR 63.6605; | (13) | 40 CFR 63.6675 |
| (7) | 40 CFR 63.6625(e)(7), (h), (j); | (14) | Tables 2d, 6, and 8. |

(c) One (1) 8 hp gasoline-fired, spark ignition, portable emergency generator, with a compliance date of October 19, 2013, as follows:

- | | | | |
|-----|--------------------------------------|------|--|
| (1) | 40 CFR 63.6580; | (8) | 40 CFR 63.6640; |
| (2) | 40 CFR 63.6585(a), (c), (d); | (9) | 40 CFR 63.6655(a), (b), (d), (e), (f); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) | 40 CFR 63.6660 |
| (4) | 40 CFR 63.6595(a)(1), (b), (c); | (11) | 40 CFR 63.6665 |
| (5) | 40 CFR 63.6603(a); | (12) | 40 CFR 63.6670 |
| (6) | 40 CFR 63.6605; | (13) | 40 CFR 63.6675 |
| (7) | 40 CFR 63.6625(e)(3), (f), (h), (j); | (14) | Tables 2d, 6, and 8. |

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
CERTIFICATION**

Source Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, DeMotte, Indiana 46310
FESOP Permit No.: F073-32549-00041

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)_____
- Report (specify)_____
- Notification (specify)_____
- Affidavit (specify)_____
- Other (specify)_____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, DeMotte, Indiana 46310
FESOP Permit No.: F073-32549-00041

This form consists of 2 pages

Page 1 of 2

- | |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none">• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16 |
|--|

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NO _x , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE AND ENFORCEMENT BRANCH**

FESOP QUARTERLY REPORT

Source Name: Babcock Paving, Inc.
 Source Address: 6049 Work Street, Demotte, Indiana 46310
 FESOP Permit No.: F073-32549-00041
 Facility: Dryer/Mixer
 Parameter: **Hot-mix Asphalt Production**
 Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 975,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Hot-mix Asphalt Produced This Month (tons)	Hot-mix Asphalt Produced Previous 11 Months (tons)	12 Month Total Hot-mix Asphalt Produced (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

Submitted by: _____
 Title / Position: _____
 Signature: _____
 Date: _____
 Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE AND ENFORCEMENT BRANCH**

FESOP QUARTERLY REPORT

Page 1 of 3

Source Name: Babcock Paving, Inc.
 Source Address: 6049 Work Street, Demotte, Indiana 46310
 FESOP Permit No.: F073-32549-00041
 Facility: Dryer/Mixer
 Parameter: **Fuel & Slag Usage / SO₂ & HCl emissions**
 Emission Limits: Sulfur dioxide (SO₂) emissions shall not exceed 92.17 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(a).
Hydrogen Chloride (HCl) emissions shall not exceed 8.82 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(b).

Fuel & Slag Limits: When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, fuel and slag usage shall not exceed the following:

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	657
No. 2 Fuel Oil (gallons)	2,075,246
No. 4 Fuel Oil (gallons)	1,964,567
Waste Oil (gallons)	1,336,440
Blast Furnace Slag (tons)	50,000

Facility: Cold-mix Asphalt Production
 Parameter: **Liquid Binder Usage / VOC Emissions**
 Emission Limits: Volatile Organic Compound (VOC) emissions from the sum of the liquid binders shall not exceed 52.50 tons per twelve (12) consecutive month period with compliance determined at the end of each month, using the equation found in Condition D.2.2(d).

Binder Limits: When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period in the production of cold-mix asphalt, liquid binder (asphalt emulsion) usage shall not exceed the following:

Type of Liquid Binder	Liquid Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	55.26
Cutback Asphalt Medium Cure	75.00
Cutback Asphalt Slow Cure	210.00
Emulsified Asphalt	113.15
Other Asphalt	2,100.00

FESOP QUARTERLY REPORT - FUEL & SLAG USAGE / SO2 & HCI EMISSIONS

QUARTER: _____ YEAR: _____

Month	Fuel Types / Slag (units)	Column 1	Column 2	Column 1 + Column 2	Equation Results	
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	Sulfur Dioxide (SO2) Emissions (tons per 12 months)	Hydrogen Chloride (HCl) Emissions (tons per 12 months)
Month 1	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Waste Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag Usage (tons)					
Month 2	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Waste Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag Usage (tons)					
Month 3	Natural Gas (million cubic feet)					
	No. 2 Fuel Oil (gallons)					
	No. 4 Fuel Oil (gallons)					
	Waste Oil (gallons)					
	Blast Furnace Slag (tons)					
	Steel Slag Usage (tons)					

- No deviation occurred in this reporting period. Submitted by: _____ Date: _____
- Deviation/s occurred in this reporting period. Title / Position: _____ Phone: _____
- Deviation has been reported on: _____ Signature: _____

FESOP QUARTERLY REPORT - LIQUID BINDER USAGE / VOC EMISSIONS

QUARTER: _____ YEAR: _____

Month	Liquid Binder Types (tons)	Column 1	Column 2	Column 1 + Column 2	Equation Results
		Solvent Usage This Month	Solvent Usage Previous 11 Months	Solvent Usage 12 Month Total	VOC Emissions (tons per 12 months)
Month 1	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 2	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 3	Cutback asphalt rapid cure liquid binder				
	Cutback asphalt medium cure liquid binder				
	Cutback asphalt slow cure liquid binder				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				

- No deviation occurred in this reporting period.
- Deviation/s occurred in this reporting period.
 Deviation has been reported on: _____

Submitted by: _____ Date: _____
 Title / Position: _____ Phone: _____
 Signature: _____

$$\text{VOC Emitted (tons/yr)} = \frac{\text{VOC solvent used for each liquid binder (tons/yr)}}{\text{Adjustment factor}}$$

Type of Liquid Binder	Adjustment Factor
Cutback Asphalt Rapid Cure	1.053
Cutback Asphalt Medium Cure	1.429
Cutback Asphalt Slow Cure	4.0
Emulsified Asphalt	2.155
Other Asphalt	40.0

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, DeMotte, Indiana 46310
FESOP Permit No.: F073-32549-00041

Months: _____ to _____ Year: _____

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C- General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
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Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
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Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

**Federally Enforceable State Operating Permit
Renewal and New Source Review
OFFICE OF AIR QUALITY**

**Babcock Paving, Inc.
6049 Work Street
DeMotte, IN 46310**

Attachment A

HOT-MIX ASPHALT CONCRETE PLANT

**FUGITIVE PARTICULATE MATTER
EMISSIONS CONTROL PLAN**

(326 IAC 6-5-4)

F073-32549-00041

BABCOCK PAVING INC.

ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN

1. Fugitive particulate matter (dust) emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following measures:
 - A. Paved roads and parking lots:
 - (1) Cleaning by vacuum sweeping on an as-needed basis (monthly at a minimum).
 - (2) Power brooming while wet either from rain or application of water.
 - B. Unpaved roads and parking lots:
 - (1) Paving with asphalt
 - (2) Treating with water on an as-needed basis.
2. Fugitive particulate matter (dust) emissions from aggregate stockpiles shall be controlled by one or more of the following measures:
 - A. Maintain minimum size and number of stock piles of aggregate.
 - B. Treating around the stockpile area with water on an as-needed basis.
 - C. Treating the stockpiles with water on an as-needed basis.
3. Fugitive particulate matter (dust) emission from outdoor conveying of aggregates shall be controlled by the following measures:
 - A. Apply water at the feed and the intermediate points on an as-needed basis.
4. Fugitive particulate matter (dust) emissions resulting from the transferring of aggregates shall be controlled by one or more of the following measures:
 - A. Minimize the vehicular distance between the transfer points.
 - B. Enclose the transfer points.
 - C. Apply water on transfer points on an as-needed basis.
5. Fugitive particulate matter (dust) emissions from the transportation of aggregate by truck, front end loader, etc. shall be controlled by one or more of the following measures:
 - A. Tarping the aggregate hauling vehicles.
 - B. Maintain vehicle bodies in a condition to prevent leakage.
 - C. Spray the aggregates with water.
 - D. Maintain a 10-mph speed limit in the yard.

6. Fugitive particulate matter (dust) emissions from the loading and unloading of aggregates shall be controlled by one or more of the following measures:
 - A. Reduce free fall distance to a minimum.
 - B. Reduce the rate of discharge of the aggregate.
 - C. Spray the aggregate with water on an as-needed basis.
7. Definitions

“An as-needed basis” means the frequency or quantity of application necessary to minimize visible particulate matter emissions.
8. Plan Implementation
 - A. The effective date of this plan was December 20, 2001.
 - B. Date of most recent update: May 20, 2008.

Reference

The Indiana Administrative Code, Title 326 Air Pollution Control Board, Article 6. Particulate Rules, weblink:
<http://www.in.gov/legislative/iac/T03260/A00060.PDF?> . See page 12 for Rule 5. Fugitive Particulate Matter Emission Limitations.

**Federally Enforceable State Operating Permit
Renewal and New Source Review
OFFICE OF AIR QUALITY**

**Babcock Paving, Inc.
6049 Work Street
DeMotte, IN 46310**

Attachment B

Title 40: Protection of Environment

[PART 60—NEW SOURCE PERFORMANCE STANDARDS](#)

**SUBPART I - STANDARDS OF PERFORMANCE
FOR HOT MIX ASPHALT FACILITIES**

F073-32549-00041

40 CFR 60, SUBPART I — STANDARDS OF PERFORMANCE FOR HOT MIX ASPHALT FACILITIES

§ 60.90 Applicability and designation of affected facility.

- (a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.
- (b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977, as amended at 51 FR 12325, Apr. 10, 1986]

§ 60.91 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

- (a) *Hot mix asphalt facility* means any facility, as described in §60.90, used to manufacture hot mix asphalt by heating and drying and mixing with asphalt cements.

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

- (a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:
 - (1) Contain particulate matter in excess of 90 mg/dscm (four hundredths (0.04) gr/dscf).
 - (2) Exhibit 20 percent opacity, or greater.

[39 FR 9314, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.93 Test methods and procedures.

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.92 as follows:
 - (1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).
 - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

Reference

The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart I: Standards of Performance for Hot Mix Asphalt Facilities weblink:

<http://ecfr.gpoaccess.gov/cji/t/text/text-idx?c=ecfr&sid=875648a88dd2168ac2096fe26e3e4c98&rqn=div6&view=text&node=40:6.0.1.1.1.20&idno=40>

**Federally Enforceable State Operating Permit
Renewal and New Source Review
OFFICE OF AIR QUALITY**

**Babcock Paving, Inc.
6049 Work Street
DeMotte, IN 46310**

Attachment C

Title 40: Protection of Environment

**[PART 63—NATIONAL EMISSION STANDARDS FOR
HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES](#)**

**SUBPART ZZZZ - RECIPROCATING INTERNAL
COMBUSTION ENGINES**

F073-32549-00041

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

SOURCE: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) Existing stationary RICE.

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill

gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements

under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$$

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 2})$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3/J ($\text{dscf}/10^6 \text{ Btu}$).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($\text{dscf}/10^6 \text{ Btu}$).

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{\text{CO}_2} = \frac{5.9}{F_o} \quad (\text{Eq. 3})$$

Where:

X_{CO_2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 — 15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{\text{adj}} = C_d \frac{X_{\text{CO}_2}}{\% \text{CO}_2} \quad (\text{Eq. 4})$$

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2 .

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO_2} = CO_2 correction factor, percent.

$\% \text{CO}_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

- (1) Identification of the specific parameters you propose to use as operating limitations;
 - (2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;
 - (3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
 - (4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
 - (5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.
- (h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

- (1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;
- (2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;
- (3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;
- (4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;
- (5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;
- (6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and
- (7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O₂ or CO₂ according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO₂ concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

- (2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.
 - (3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).
 - (4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.
 - (5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.
 - (6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.
- (c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.
- (d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.
- (e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:
- (1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;
 - (2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;
 - (3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;
 - (4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;
 - (5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;
 - (6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.
 - (7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or

(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this

subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

- (a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.
- (b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.
- (c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.
- (d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.
- (e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:
 - (1) The compliance demonstration must consist of at least three test runs.
 - (2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
 - (3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O₂ using one of the O₂ measurement methods specified in Table 4 of this subpart. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O₂ using one of the O₂ measurement methods specified in Table 4 of this subpart. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency

situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart

and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in § 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required

information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in § 63.6640(f)(2)(ii) or (iii) or § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§ 63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency

stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless of whether or not such failure is permitted by this subpart.
- (4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (e.g. biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO₂ .

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(2)(ii) or (iii) and § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO₂, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (i.e., remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites,

whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart P of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE > 500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ¹
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂	

¹Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

TABLE 1B TO SUBPART ZZZZ OF PART 63—OPERATING LIMITATIONS FOR EXISTING, NEW, AND RECONSTRUCTED SI 4SRB STATIONARY RICE >500 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F. ¹
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and not using NSCR.	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O ₂ . If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O ₂ until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ¹
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O ₂	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O ₂	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

TABLE 2B TO SUBPART ZZZZ OF PART 63—OPERATING LIMITATIONS FOR NEW AND RECONSTRUCTED 2SLB AND CI STATIONARY RICE >500 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS, NEW AND RECONSTRUCTED 4SLB STATIONARY RICE ≥250 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS, EXISTING CI STATIONARY RICE >500 HP

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. ¹
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. ¹
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	
existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6707, Jan. 30, 2013]

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

TABLE 2C TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR EXISTING COMPRESSION IGNITION STATIONARY RICE LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS AND EXISTING SPARK IGNITION STATIONARY RICE ≤500 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE ¹	a. Change oil and filter every 500 hours of operation or annually, whichever comes first. ² b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ³
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first. ² b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O ₂ .	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Non-Emergency, non-black start CI stationary RICE 300>HP≤500.” is corrected to read “4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500.	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O ₂ ; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O ₂ ; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE. ¹	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ² b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ² b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary. ³	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first; ² b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary. ³	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O ₂ .	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O ₂ .	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O ₂ .	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O ₂ .	

¹ If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

² Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

TABLE 2D TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR EXISTING STATIONARY RICE LOCATED AT AREA SOURCES OF HAP EMISSIONS

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first; ¹ b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O ₂ ; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O ₂ ; or	
	b. Reduce CO emissions by 70 percent or more.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Emergency stationary CI RICE and black start stationary CI RICE. ²	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year. ²	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹ ; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first; ¹	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; ¹ b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

TABLE 3 TO SUBPART ZZZZ OF PART 63—SUBSEQUENT PERFORMANCE TESTS

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually. ¹
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually. ¹
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually. ¹
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

¹ After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6612, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

TABLE 4 TO SUBPART ZZZZ OF PART 63. REQUIREMENTS FOR PERFORMANCE TESTS

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Measure the O ₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005). ^{a c}	(a) Measurements to determine O ₂ must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) ^{a b c} or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O ₂ , dry basis.
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O ₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005). ^a	(a) measurements to determine O ₂ concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03. ^a	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03, ^a provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) THC concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) if using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O ₂ concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005). ^a	(a) measurements to determine O ₂ concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03. ^a	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03, ^a provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005), ^a Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03. ^a	(a) CO concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

^a Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

^b You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

^c ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.

[78 FR 6711, Jan. 30, 2013]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

TABLE 5 TO SUBPART ZZZZ OF PART 63—INITIAL COMPLIANCE WITH EMISSION LIMITATIONS, OPERATING LIMITATIONS, AND OTHER REQUIREMENTS

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
<p>3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE \geq250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP</p>	<p>a. Reduce CO emissions and not using oxidation catalyst</p>	<p>i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.</p>
<p>4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP</p>	<p>a. Limit the concentration of CO, and not using oxidation catalyst</p>	<p>i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and</p>
		<p>iii. You have recorded the approved operating parameters (if any) during the initial performance test.</p>
<p>5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE \geq250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP</p>	<p>a. Reduce CO emissions, and using a CEMS</p>	<p>i. You have installed a CEMS to continuously monitor CO and either O₂ or CO₂ at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and</p>
		<p>iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.</p>
<p>6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP</p>	<p>a. Limit the concentration of CO, and using a CEMS</p>	<p>i. You have installed a CEMS to continuously monitor CO and either O₂ or CO₂ at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and</p>

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency stationary CI RICE $300 < \text{HP} \leq 500$ located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency stationary CI RICE $300 < \text{HP} \leq 500$ located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O ₂ ;

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O ₂ , or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

TABLE 6 TO SUBPART ZZZZ OF PART 63—CONTINUOUS COMPLIANCE WITH EMISSION LIMITATIONS, AND OTHER REQUIREMENTS

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ^a ; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ^a ; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
6. Non-emergency 4SRB stationary RICE with a brake HP $\geq 5,000$ located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent. ^a
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ^a ; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ^a ; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
<p>9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE</p>	<p>a. Work or Management practices</p>	<p>i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.</p>
<p>10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE</p>	<p>a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst</p>	<p>i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and</p>
		<p>ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and</p>
		<p>iii. Reducing these data to 4-hour rolling averages; and</p>
		<p>iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and</p>

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O ₂ ; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O ₂ , or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

TABLE 7 TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR REPORTS

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.
		b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4).	i. Semiannually according to the requirements in § 63.6650(b).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5).
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No.	
§ 63.6(f)(1)	Applicability of standards	No.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(j)	Presidential compliance exemption	Yes.	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes.	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.
§ 63.7(d)	Testing facilities	Yes.	
§ 63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes.	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§ 63.7(f)	Alternative test method provisions	Yes.	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§ 63.7(h)	Waiver of tests	Yes.	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes.	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No.	
§ 63.8(b)(1)	Monitoring	Yes.	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§ 63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes.	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which applies to COMS.
		Except that § 63.8(e) only applies as specified in § 63.6645.	
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved.

General provisions citation	Subject of citation	Applies to subpart	Explanation
		Except that § 63.9(b) only applies as specified in § 63.6645.	
§ 63.9(c)	Request for compliance extension	Yes	Except that § 63.9(c) only applies as specified in § 63.6645.
§ 63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that § 63.9(g) only applies as specified in § 63.6645.	
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved.
			Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes.	
§ 63.9(j)	Change in previous information	Yes.	
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.10(b)(2)(vi)-(xi)	Records	Yes.	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes.	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§ 63.10(b)(3)	Records of applicability determination	Yes.	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes.	
§ 63.10(d)(2)	Report of performance test results	Yes.	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes.	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that § 63.10(e)(3)(i) (C) is reserved.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§ 63.11	Flares	No.	
§ 63.12	State authority and delegations	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by reference	Yes.	
§ 63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

Appendix A—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 SCOPE AND APPLICATION. WHAT IS THIS PROTOCOL?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O₂) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O₂).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O ₂)	7782-44-7	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O₂, or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 SUMMARY OF PROTOCOL

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O₂ gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design

specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 DEFINITIONS

3.1 Measurement System. The total equipment required for the measurement of CO and O₂ concentrations. The measurement system consists of the following major subsystems:

3.1.1 Data Recorder. A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 Electrochemical (EC) Cell. A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 Interference Gas Scrubber. A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 Moisture Removal System. Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 Sample Interface. The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 Nominal Range. The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 Calibration Gas. A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 Zero Calibration Error. The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 Up-Scale Calibration Error. The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 Interference Check. A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 Repeatability Check. A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 Sample Flow Rate. The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 Sampling Run. A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval

during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O₂ and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre-sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 Sampling Day. A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check. The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 Performance-Established Configuration. The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 INTERFERENCES.

When present in sufficient concentrations, NO and NO₂ are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 SAFETY. [RESERVED]

6.0 EQUIPMENT AND SUPPLIES.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 Sample Probe. A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 Sample Line. Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 Calibration Assembly (optional). A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 Particulate Filter (optional). Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 Sample Pump. A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 Sample Flow Rate Monitoring. An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 Sample Gas Manifold (optional). A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 EC cell. A device containing one or more EC cells to determine the CO and O₂ concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 Data Recorder. A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O₂; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 Interference Gas Filter or Scrubber. A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 REAGENTS AND STANDARDS. WHAT CALIBRATION GASES ARE NEEDED?

7.1 Calibration Gases. CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O₂. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O₂) is acceptable for calibration of the O₂ cell. If needed, any lower percentage O₂ calibration gas must be a mixture of O₂ in nitrogen.

7.1.1 Up-Scale CO Calibration Gas Concentration. Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 Up-Scale O₂ Calibration Gas Concentration.

Select an O₂ gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O₂. When the average exhaust gas O₂ readings are above 6 percent, you may use dry ambient air (20.9 percent O₂) for the up-scale O₂ calibration gas.

7.1.3 Zero Gas. Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO₂).

8.0 SAMPLE COLLECTION AND ANALYSIS

8.1 Selection of Sampling Sites.

8.1.1 Control Device Inlet. Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 Exhaust Gas Outlet. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 Stack Gas Collection and Analysis. Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the "sample conditioning phase" once per minute until constant readings are obtained. Then begin the "measurement data phase" and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the "refresh phase" by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the "measurement data phase" readings to calculate the average stack gas CO and O₂ concentrations.

8.3 EC Cell Rate. Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 QUALITY CONTROL (RESERVED)

10.0 CALIBRATION AND STANDARDIZATION

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 Zero Calibration. For both the O₂ and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O₂ for the O₂ channel.

10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this “sample conditioning phase” once per minute until readings are constant for at least two minutes. Then begin the “measurement data phase” and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 Up-Scale Calibration Error. The mean of the difference of the “measurement data phase” readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O₂, whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single “measurement data phase” reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O₂, whichever is less restrictive, respectively.

10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 ANALYTICAL PROCEDURE

The analytical procedure is fully discussed in Section 8.

12.0 CALCULATIONS AND DATA ANALYSIS

Determine the CO and O₂ concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the “measurement data phase”.

13.0 PROTOCOL PERFORMANCE

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the “measurement data phase”. The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed).

13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO₂ gas standards that are generally recognized as representative of diesel-fueled engine NO and NO₂ emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO₂ interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 Repeatability Check Calculations. Determine the highest and lowest average “measurement data phase” CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ± 3 percent or ± 1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 POLLUTION PREVENTION (RESERVED)

15.0 WASTE MANAGEMENT (RESERVED)

16.0 ALTERNATIVE PROCEDURES (RESERVED)

17.0 REFERENCES

- (1) “Development of an Electrochemical Cell Emission Analyzer Test Protocol”, Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.
- (2) “Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers”, EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.
- (3) “ICAC Test Protocol for Periodic Monitoring”, EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.
- (4) “Code of Federal Regulations”, Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

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[78 FR 6721, Jan. 30, 2013]

Resource(s)

EPA Rule and Implementation Information for Reciprocating Internal Combustion Engines
<http://www.epa.gov/ttn/atw/rice/ricepg.html> (scroll down the page to find Implementation Information)

Reference

The US EPA Electronic Code of Federal Regulations - 40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines web address:
<http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&rgn=div6&view=text&node=40:14.0.1.1.1.1&idno=40>

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a New Source Review (NSR) and the Renewal of a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name: Babcock Paving, Inc.
Source Location: 6049 Work Street, Demotte, Indiana 46310
County: Jasper
SIC Code: 2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.: F073-32549-00041
Permit Reviewer: Hannah L. Desrosiers

On March 5, 2013, the Office of Air Quality (OAQ) had a notice published in the Rensselaer Republican, Rensselaer, Indiana, stating that Babcock Paving, Inc. had applied for a new source review and renewal of its FESOP. Babcock Paving, Inc. requested the flexibility to process blast furnace slag, electric arc furnace steel slag and recycled asphalt shingles (asbestos-free post consumer waste and/or factory seconds) in their aggregate mix, approval to combust No. 4 fuel oil (also known as #4 Diesel) in the dryer/mixer burner, and to add a Reclaimed Asphalt Pavement (RAP) screening unit to its operation. These changes are intended to increase the operational flexibility of this existing stationary source. The notice also stated that the OAQ proposed to issue a FESOP Renewal with New Source Review for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

No comments were received during the public notice period.

Additional Changes

IDEM, OAQ has updated Attachment C of the permit to contain the most recent version of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63, Subpart ZZZZ.

Note: The most recent version of 40 CFR Part 63, Subpart ZZZZ, is now included in its entirety in the permit, as Attachment C, but these changes are not shown in their entirety as bold and strikethrough text.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Ms. Hannah Desrosiers at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-9327 or toll free at 1-800-451-6027 extension 3-9327.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
New Source Review (NSR) and the Renewal of a
Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Babcock Paving, Inc.
Source Location:	6049 Work Street, Demotte, Indiana 46310
County:	Jasper
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.:	F073-32549-00041
Permit Reviewer:	Hannah L. Desrosiers

The Office of Air Quality (OAQ) has reviewed an operating permit renewal and new source review application from Babcock Paving, Inc. relating to the modification to, and continued operation of, an existing drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation.

History

On November 26, 2012, Babcock Paving, Inc. submitted an application to the OAQ requesting to renew its operating permit. Additionally, Babcock Paving, Inc. has requested the flexibility to process blast furnace slag, electric arc furnace steel slag and recycled asphalt shingles (asbestos-free post consumer waste and/or factory seconds) in their aggregate mix, and has indicated that they do not intend to crush any recycled asphalt pavement (RAP), and/or grind any kind of recycled asphalt shingles (RAS), asbestos-free or otherwise, on-site. Furthermore, Babcock Paving, Inc. has requested approval to combust No. 4 fuel oil (also known as #4 Diesel) in the dryer/mixer burner, and finally, Babcock Paving, Inc. has indicated that it had added a RAP screening process, including a 100 Hp diesel fuel-fired RAP Screening Unit, to its operation in 2011. Each of these changes is intended to increase the operational flexibility of this existing stationary source.

This renewal with new source review incorporates multiple Title I changes, which are indicated throughout this technical support document.

Babcock Paving, Inc. was issued a New Source FESOP, No. F073-26569-00041, on September 24, 2008.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, with a maximum throughput capacity of 225 tons of raw material per hour, processing blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 75 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, or waste oil, as available, and equipped with one (1) jet-pulse baghouse for particulate control, exhausting through stack S1.
- (b) Material handling and conveying operations, consisting of the following:
 - (1) One (1) aggregate storage area, constructed in 2008, with a maximum storage capacity of 50,000 tons, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.75 acres;

- (B) Limestone storage piles, with a maximum anticipated pile size of 3.75 acres;
 - (C) Recycled asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.25 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 0.75 acres;
 - (E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 2.00 acres; and
 - (F) Recycled asphalt shingles (RAS) piles, with a maximum anticipated pile size of 0.62 acres.
- (2) One (1) aggregate handling and transfer system, constructed in 2008, consisting of:
- (A) One (1) cold feed system, consisting of five (5) compartments, each with a capacity of 30 (thirty) tons, for a total aggregate holding capacity of 150 tons;
 - (B) Three (3) feeder conveyors;
 - (C) One (1) screen deck; and
 - (D) One (1) aggregate bucket elevator;
- (3) One (1) Recycled Asphalt Pavement (RAP) system, identified as RC1, constructed in 2008, consisting of one (1) RAP bin, one (1) shaker, and one (1) conveyor, with a maximum throughput capacity of 214 tons of RAP per hour;
- (4) One (1) 100 horsepower (hp), diesel fuel-fired, portable Recycled Asphalt Pavement (RAP) Screening Unit, identified as RC2, manufactured and initially constructed in 2003, and installed onsite in 2011, processing a maximum of 200 tons of RAP/hr, uncontrolled and exhausting to the atmosphere, and including:
- (A) one (1) feeder bin;
 - (B) one (1) 30 foot feeder belt;
 - (C) One (1) screen deck; and
 - (D) Three (3) stacking conveyors;
- Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.
- (5) One (1) hot-mix asphalt drag slat and transfer conveyor to silo, constructed in 2008; and
- (6) Two (2) hot-mix asphalt storage silos, constructed in 2008, each with a maximum capacity of 100 tons.

Under 40 CFR 60, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt plant is considered an affected facility.

- (c) Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles.

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit
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No unpermitted emission units were discovered operating at this existing source during this review process.

Emission Units and Pollution Control Equipment Removed From the Source

No emission units have been removed from this existing source during this review process.

Insignificant Activities

The source also consists of the following insignificant activities:

- (a) One (1) hot oil heater, identified as EU-04, constructed in 2008, with a maximum heat input capacity of 1.25 million British thermal units per hour (MMBtu/hr), firing natural gas or No. 2 fuel as available, uncontrolled and exhausting through stack S4. [326 IAC 6-2]
- (b) Two (2) 25,000 gallon liquid asphalt storage tanks, identified as Tank A and Tank B, constructed in 2008, uncontrolled and exhausting to the atmosphere;
- (c) Two (2) 15,000 gallon fuel oil storage tanks, identified as Tank C and Tank D, constructed in 2008, uncontrolled and exhausting to the atmosphere;
- (d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thousand (230,000) gallons per month;
- (e) One (1) 20.5 hp gasoline-fired, spark ignition, 4-stroke lean burn, portable maintenance welding unit, manufactured in 1995 and constructed in 1995, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (f) One (1) 8.0 hp gasoline-fired, spark ignition, portable emergency generator, identified as the "back-up" generator, manufactured in 1999 and constructed in 2000, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

- (g) Combustion source flame safety purging on startup;
- (h) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;
- (i) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (j) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.
- (k) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;
- (l) Cleaners and solvents characterized as follows:
 - (1) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 °C (100 °F) or;
 - (2) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 °C (68 °F); the use of which for all cleaners and solvents combined does not exceed one hundred forty-five (145) gallons per twelve (12) months;

- (m) Portable containers used for the collection, storage, or disposal of materials provided the container capacity is equal to or less than forty-six hundredths (0.46) cubic meters (121.5 gallons) and the container is closed, except when the material is added or removed.
- (n) Closed loop heating and cooling systems;
- (n) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment; and
- (o) Paved and unpaved roads with limited public access [326 IAC 6-4, 326 IAC 6-5]

Existing Approvals

The source has been operating under FESOP NSR No. F073-26569-00041, issued on September 24, 2008.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no pending enforcement actions related to this existing source.

Emission Calculations

See Appendices A.1 and A.2 of this TSD for detailed emission calculations.

County Attainment Status

The source is located in Jasper County. The following attainment status designations are applicable to Jasper County:

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.

¹Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(Air Pollution Control Board; 326 IAC 1-4-38; filed Dec 26, 2007, 1:43 p.m.: 20080123-IR-326070308FRA)

- (a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Jasper County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) PM_{2.5}
 Jasper County has been classified as attainment for PM_{2.5}. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct PM_{2.5} significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM_{2.5}, SO₂, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (c) Other Criteria Pollutants
 Jasper County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions, from the affected facilities to which the New Source Performance Standard is applicable, are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Note: This facility falls within the “listed source category” for the New Source Performance Standard for Hot-mix Asphalt Facilities, 40 CFR 60, Subpart I, which was promulgated on or before August 7, 1980.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Pollutant	tons/year
PM	27,702.51
PM10 ⁽¹⁾	6,439.33
PM2.5	1,493.22
SO2	568.72
NOx	69.57
VOC	23,737.42
CO	134.98
GHG's as CO ₂ e	58,562.31
Total HAPs ⁽²⁾	6,212.32
Maximum (Worst Case) HAP	2,131.78 (xylene)

NOTES

- (1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
- (2) HAPs include , 2,2,4-trimethylpentane, 2-methylnaphthalene, acenaphthene, acetaldehyde, acrolein, benzene, bis(2-ethylhexyl)phthalate, bromomethane, carbon disulfide, chloromethane, cumene, ethylbenzene, fluorene, formaldehyde, hydrogen chloride (HCl), hexane, methyl chloroform, methyl ethyl ketone (MEK), methyl-tert-butylether, naphthalene, phenol, phenanthrene, polycyclic organic matter (POM), propionaldehyde, pyrene, quinone, styrene, toluene, total polycyclic aromatic hydrocarbon (PAH) HAPs, xylene, and arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium compounds.
- (3) Appendix A.1 of this TSD, reflect the unrestricted, uncontrolled, potential emissions of the source.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, PM2.5, SO2, VOC, and CO is equal to or greater than 100 tons per year. However, the Permittee has agreed to limit the source's PM10, PM2.5, SO2, VOC, and CO emissions to less than Title V levels, therefore the Permittee will be issued a FESOP Renewal.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants are less than 100 tons per year.

- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of GHGs is less than one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. However, the Permittee has agreed to limit the source's single HAP emissions and total HAP emissions below Title V levels. Therefore, the Permittee will be issued a FESOP Renewal.

Potential to Emit After Issuance

The source has opted to remain a FESOP source. The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

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Process/ Emission Unit	Potential To Emit of the Entire Source after Issuance of Renewal (tons/year)									
	PM	PM ₁₀ *	PM _{2.5} **	SO ₂	NO _x	VOC	CO	GHGs** as CO ₂ e	Total HAPs	Worst Single HAP
Ducted/Ductable Emissions										
Dryer Fuel Combustion (worst case) ⁽¹⁾	40.50	32.27	32.27	73.67	32.85	1.81	27.59	39,714.40	10.08	8.82 (HCl)
Dryer/Mixer ⁽²⁾ (Process)	185.25	78.00	87.26	28.28	26.81	15.60	63.38	16,210.35	5.20	1.51 (formaldehyde)
Dryer/Mixer Slag Processing ⁽²⁾	0	0	0	18.50	0	0	0	0	0	N/A
Hot Oil Heater - Fuel Combustion / Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	1,095.00	0.013	0.010 (hexane)
Generator (< 250 hp) Fuel Combustion (welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	97.32	2.43E ⁻⁰³	7.42E ⁻⁰⁴ (formaldehyde)
Generator (< 250 hp) Fuel Combustion (emergency)	1.44E ⁻⁰³	1.44E ⁻⁰³	1.44E ⁻⁰³	1.18E ⁻⁰³	0.02	0.03	0.01	2.17	5.42E ⁻⁰⁵	1.65E ⁻⁰⁵ (formaldehyde)
Generator (< 600 hp) Fuel Combustion (RAP screening unit)	0.96	0.96	0.96	0.90	13.58	1.10	2.93	505.38	0.012	3.62E ⁻⁰³ (formaldehyde)
Generator (> 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	0	N/A
Worst Case Emissions ^α	186.36	79.16	88.42	95.90	48.22	18.11	67.40	41,414.27	10.11	8.82 (HCl)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, and On-Site Yard ⁽³⁾	0.54	0.54	0.54	0	0	8.35	1.40	0	0.14	0.04 (formaldehyde)
Material Storage Piles	3.74	1.31	1.31	0	0	0	0	0	0	N/A
Material Processing and Handling ⁽³⁾	3.15	1.49	0.23	0	0	0	0	0	0	N/A
Material Screening, and Conveying ⁽³⁾	12.97	4.54	4.54	0	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case) ⁽¹⁾	34.62	8.82	0.88	0	0	0	0	0	0	N/A
Cold Mix Asphalt Production ⁽⁴⁾	0	0	0	0	0	52.50	0	0	13.69	4.73 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	N/A
Volatile Organic Liquid Storage Vessels ***	0	0	0	0	0	negl.	0	0	negl.	negl.
Total Fugitive Emissions	55.01	16.70	7.49	0	0	60.85	1.40	0	13.83	4.73 (xylenes)
Total Limited/ Controlled Emissions	241.37	95.86	95.92	95.90	48.22	78.96	68.80	41,414.27	23.94	8.82 (HCl)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	N/A	N/A
negl = negligible N/A = Not applicable HCl = hydrogen chloride * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant." ** The 100,000 CO ₂ e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD. *** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible. α Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators. (1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP). (4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).										

(a) FESOP and PSD Minor Status

This existing source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will continue to be limited to less than the Title V major source

threshold levels. In addition, this existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is still limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is still an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

- (1) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, PM10, PM2.5, SO2, VOC, and CO emissions from the dryer/mixer shall be limited as follows:
 - (A) The amount of hot-mix asphalt processed shall not exceed 975,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source.*
 - (B) The PM10 emissions from the dryer/mixer shall not exceed 0.160 pounds per ton of asphalt processed. *This is an existing requirement for this source.*
 - (C) The PM2.5 emissions from the dryer/mixer shall not exceed 0.179 pounds per ton of asphalt processed. *This is a change from 0.380 pound per ton of asphalt processed. This is a Title I change.*
 - (D) The SO2 emissions from the dryer/mixer shall not exceed 0.058 pounds per ton of asphalt processed. *This is an existing requirement for this source;*
 - (E) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed. *This is an existing requirement for this source; and*
 - (F) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed. *This is an existing requirement for this source.*
 - (G) The Permittee shall control PM10 and PM2.5 emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit. *This is an existing requirement for this source.*

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO2, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Note: The potential to emit NOx from the dryer/mixer is well below 100 tons per year. Therefore, in consultation with the source, the existing NOx limit, and any associated compliance determination, recordkeeping and reporting requirements, have been removed from the permit. *This is a Title I change.*

- (2) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, SO2 and HAP emissions from the dryer/mixer shall be limited as follows:
 - (A) Fuel and Slag Specifications
 - (i) The sulfur content of No. 2 fuel oil shall not exceed 0.50% by weight. *This is an existing requirement for this source.*
 - (ii) The sulfur content of No. 4 fuel oil shall not exceed 0.50% by weight. *This is a new requirement for this source. This is a Title I change.*

- (iii) The sulfur content of the waste oil shall not exceed 0.75% by weight. *This is an existing requirement for this source.*
- (iv) The waste oil combusted shall not contain more than 0.947% ash, 0.200% chlorine, and 0.0089% lead. *This is an existing requirement for this source.*
- (v) The HCl emissions shall not exceed 0.0132 pounds of HCl per gallon of waste oil burned. *This is a new requirement for this source. This is a Title I change.*
- (vi) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight. *This is a new requirement for this source. This is a Title I change.*
- (vii) The SO₂ emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag processed in the aggregate mix. *This is a new requirement for this source. This is a Title I change.*
- (viii) The sulfur content of the steel slag shall not exceed 0.66% by weight. *This is a new requirement for this source. This is a Title I change.*
- (ix) The SO₂ emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag processed in the aggregate mix. *This is a new requirement for this source. This is a Title I change.*

(B) Single Fuel and Slag Usage Limitations:

When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel and slag shall be limited as follows:

- (i) Natural gas usage shall not exceed 657 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 1,785 million cubic feet per twelve (12) month period. This represents the maximum possible usage for this unit. This is a Title I change;*
- (ii) No. 2 fuel oil usage shall not exceed 2,075,246 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 2,072,102 gallons per twelve (12) month period. This change allows for the addition of blast furnace slag to the aggregate mix. This is a Title I change;*
- (iii) No. 4 fuel oil usage shall not exceed 1,964,567 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new limit for this source. This is a Title I change;*
- (iv) Waste oil usage shall not exceed 1,336,440 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 1,475,374 gallons per twelve (12) month period. This change allows for the addition of blast furnace slag to the aggregate mix. This is a Title I change; and*

Note: The source is only permitted to burn the above-mentioned fuels. *This is a new requirement for this source. This is a Title I change.*

- (v) The blast furnace slag usage shall not exceed 50,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement for this source. This is a Title I change.*
- (vi) A steel slag usage limit is not required for the source to comply with their FESOP SO₂ Limit, since unlimited use results in a PTE SO₂ of only 1.38 tons/yr (see TSD Appendix A.1, page 6 of 21). To form a conservative estimate, limited SO₂ emissions are based on the "worst case" assumption that steel slag usage corresponds to 100% of the aggregate used to produce hot-mix asphalt (see TSD Appendix A.2, page 6 of 21).

(C) Multiple Fuel and Slag Usage Limitation:

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer shall be limited as follows:

- (i) SO₂ emissions from the dryer/mixer shall not exceed 92.17 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of less than 100 tons of sulfur dioxide for every twelve (12) month consecutive period. This change is necessary to allow for emissions from other units. This is a Title I change.*

$$\text{SO}_2 = 73.67 + 18.50 = 92.17$$

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula:

$$S = \frac{G(E_G) + O(E_O) + F(E_F) + W(E_W) + B(E_B) + T(E_T)}{2,000 \text{ lbs/ton}}$$

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- B = tons of blast furnace slag used in the last 12 months
- T = tons of steel slag used in the last 12 months
- E_G = 0.6 lbs/MMCF of natural gas
- E_O = 0.071 lbs/gallon of No. 2 fuel oil
- E_F = 0.075 lbs/gallon of No. 4 fuel oil
- E_W = 0.1103 lbs/gallon of waste oil
- E_B = 0.74 lbs/ton of blast furnace slag used
- E_T = 0.0014 lbs/ton of steel slag used

- (ii) The potential to emit NO_x from unrestricted fuel combustion in the existing dryer/mixer is well below 100 tons per year. Therefore, in consultation with the source, the existing NO_x limit, and any associated compliance determination, recordkeeping and reporting requirements, have been removed from the permit. *This is a Title I change.*
- (iii) The potential to emit CO from unrestricted fuel combustion in the existing dryer/mixer is well below 100 tons per year. Therefore, in consultation with the source, the existing CO limit, and any associated compliance

determination, recordkeeping and reporting requirements, have been removed from the permit. *This is a Title I change.*

- (iv) HCl emissions from the dryer/mixer shall not exceed 8.82 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement for this source. This is a Title I change.*

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula: *This is a new requirement for this source. This is a Title I change.*

$$\text{HCl} = \frac{W(E_w)}{2000 \text{ lbs/ton}}$$

where:

HCl = tons of hydrogen chloride emissions for a 12-month consecutive period

W = gallons of waste oil used in the last 12 months.

E_w = 0.0132 lbs/gallon of waste oil.

- (D) Asphalt Shingle Usage Limitations:
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles (RAS) on-site and shall only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix. *This is a new requirement for this source. This is a Title I change.*

Note: Since the source does not intend to grind shingles at this plant, they will be required to use/purchase only supplier certified asbestos-free post consumer waste and/or factory seconds shingles in their aggregate mix. This requirement will be included, because it is the physical act of grinding that releases asbestos into the air. Therefore, the company performing the grinding would need to test the shingles prior to grinding, in order for the testing to be effective. A new condition limiting the use of asphalt shingles in the aggregate mix to only those that are asbestos-free, has been added to the permit.

Compliance with these limits, combined with the potential to emit SO₂ and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO₂ to less than 100 tons per twelve (12) consecutive month period, each, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

- (3) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable the VOC emissions from cold-mix (cutback) asphalt production shall be limited as follows:
- (A) VOC emissions from the sum of the binders shall not exceed 52.50 tons per twelve (12) consecutive month period with compliance determined at the end of each month. *This is an existing requirement for this source.*

- (B) Liquid binders used in the production of cold mix asphalt shall be defined as follows: *This is a new requirement for this source. This is a Title I change.*
- (i) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95.0% by weight of VOC solvent evaporating. *This is a new requirement for this source. This is a Title I change.*
 - (ii) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70.0% by weight of VOC solvent evaporating. *This is a new requirement for this source. This is a Title I change.*
 - (iii) Cut back asphalt slow cure, containing a maximum of 20.0% of the liquid binder by weight of VOC solvent and 25.0% by weight of VOC solvent evaporating. *This is a new requirement for this source. This is a Title I change.*
 - (iv) Emulsified asphalt with solvent, containing a maximum of 15.0% of liquid binder by weight of VOC solvent and 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume. *This is a new requirement for this source. This is a Title I change.*
 - (v) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating. *This is a new requirement for this source. This is a Title I change.*
- (C) When using only one type of liquid binder per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:
- (i) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 55.26 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source.*
 - (ii) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 75.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source.*
 - (iii) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 210.00 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source.*
 - (iv) The amount of VOC solvent used in emulsified asphalt shall not exceed 113.15 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source.*
 - (v) The amount of VOC solvent used in all other asphalt shall not exceed 2,100.00 tons per twelve (12) consecutive month period, with compliance

determined at the end of each month. *This is an existing requirement for this source.*

(D) When using more than one liquid binder per twelve (12) consecutive month period, VOC emissions shall be limited as follows:

(i) The VOC solvent allotments in (C)(i) through (C)(v) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows. *This is a change from multiplying by the % VOC Evaporation rate. This is a Title I change.*

$$\text{VOC emitted (tons/yr)} = \frac{\text{VOC solvent used for each binder (tons/yr)}}{\text{Adjustment factor}}$$

Type of Binder	Adjustment Factor	[changed from] VOC Evaporation rate
Cutback Asphalt Rapid Cure	1.053	95.0 %
Cutback Asphalt Medium Cure	1.429	70.0 %
Cutback Asphalt Slow Cure	4.000	25.0 %
Emulsified Asphalt	2.155	46.4 %
Other Asphalt	40.0	2.5 %

Compliance with these limits, combined with the potential to emit VOCs and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit VOCs to less than 100 tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

(b) PSD Minor Status

This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit PM is limited to less than 250 tons per year, the potential to emit all other attainment regulated criteria pollutants are less than 250 tons per year, the potential to emit greenhouse gases (GHGs) is less than the PSD subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

- (1) The amount of hot-mix asphalt processed shall not exceed 975,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is an existing requirement for this source.*
- (2) PM emissions from the dryer/mixer shall not exceed 0.380 pounds per ton of asphalt processed. *This is an existing requirement for this source.*

- (3) The Permittee shall control PM emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit. *This is an existing requirement for this source.*

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Federal Rule Applicability

New Source Performance Standards (NSPS)

(a) 40 CFR 60, Subpart I - Standards for Hot-mix Asphalt Facilities

The existing stationary drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 2008, is still subject to the New Source Performance Standard, 40 CFR 60, Subpart I (326 IAC 12), because it continues to meet the definition of a hot-mix asphalt facility pursuant to the rule and was constructed after June 11, 1973. *This is an existing requirement for this source.*

The units subject to this rule include the following:

- (1) Dryers
- (2) Systems for screening, handling, storing, and weighing hot aggregate
- (3) Systems for loading, transferring, and storing mineral filler
- (4) Systems for mixing hot-mix asphalt
- (5) The loading, transfer, and storage systems associated with emission control systems

Therefore, pursuant to 40 CFR 60.92(a), particulate matter emissions from the above listed units, shall not exceed four hundredths (0.04) grains per dry standard cubic foot (gr/dscf), and visible emissions shall not exceed twenty percent (20%) opacity.

The source will comply with this rule by using a baghouse to limit particulate matter emissions from the dryer/mixer to less than four hundredths (0.04) gr/dscf, and by applying the management techniques outlined in their Fugitive Dust Plan (included as Attachment A of the permit).

The hot-mix asphalt facility is still subject to the following portions of 40 CFR 60, Subpart I (included as Attachment B of the permit):

- (1) 40 CFR 60.90.
- (2) 40 CFR 60.91.
- (3) 40 CFR 60.92.
- (4) 40 CFR 60.93.

Note: this NSPS includes testing requirements applicable to this source.

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the hot-mix asphalt facility except when otherwise specified in 40 CFR 60 Subpart I.

(b) 40 CFR 60, Subpart Dc - Standards for Small Industrial/Commercial/Institutional Steam Generating Units

- (1) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, for the drum-mix, hot-mix asphalt dryer/mixer, identified as

EU-01, because the dryer/mixer burner is a direct-fired process unit and not a steam generating unit, as defined in 40 CFR 60.41c.

- (2) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, for the one (1) 1.25 MMBtu/hr hot oil heater, identified as EU-04, because it has a maximum design heat input capacity of less than the applicability threshold of ten (10) MMBtu/hr.
 - (3) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, for the 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, or the 8.0 hp gasoline-fired portable emergency generator, because each is an internal combustion engine (ICE) and not a steam generating unit, as defined in 40 CFR 60.41c.
- (c) 40 CFR 60, Subpart Kb - Standards for Volatile Organic Liquid Storage Vessels
- (1) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the two (2) existing 25,000 gallon liquid asphalt storage tanks, because although each tank was constructed in 2008, after the rule applicability date of July 23, 1984, and each tank has a maximum storage capacity greater than seventy-five cubic meters (75 m³) (19,813 gallons) but less than 151 m³ (39,890 gallons), the liquid stored in each tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).
 - (2) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the two (2) existing 15,000 gallon fuel oil storage tanks, because although each tank was constructed in 2008, after the rule applicability date of July 23, 1984, each tank has a maximum storage capacity of less than seventy-five cubic meters (75 m³) (19,813 gallons), and the liquid stored in each tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).
 - (3) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the petroleum fuel, other than gasoline, dispensing facility, because although it was constructed in 2008, after the rule applicability date of July 23, 1984, maximum storage capacity of less than seventy-five cubic meters (75 m³) (19,813 gallons), and the liquid stored has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).
 - (4) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the gasoline fuel transfer and dispensing operation, because although it was constructed in 2008, after the rule applicability date of July 23, 1984, and the liquid stored has a maximum true vapor pressure of greater than fifteen kiloPascals (15.0 kPa), the maximum storage capacity is less than seventy-five cubic meters (75 m³) (19,813 gallons).
- (d) 40 CFR 60, Subpart UU - Standards for Asphalt Processing and Asphalt Roofing Manufacture
The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60, Subpart UU (2U) (326 IAC 12), are not included in the permit, because the stationary drum-mix, hot-mix asphalt plant still does not meet the definition of an asphalt processing plant, since it does not blow asphalt, or an asphalt roofing plant since it does not produce asphalt roofing products, and finally pursuant to §60.101(a) the stationary drum-mix, hot-mix asphalt plant is still not a petroleum refinery since it is not engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

- (e) 40 CFR 60, Subpart OOO - Standards for Nonmetallic Mineral Processing Plants
The requirements of the New Source Performance Standard for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO) (326 IAC 12), are not included in the permit, since the source still does not crush or grind any Recycled Asphalt Pavement (RAP), Recycled Asphalt Shingles (RAS), or other nonmetallic minerals. Instead, the source will be receiving pre-crushed/pre-sized materials for use in its aggregate mixes. Therefore, pursuant to 40 CFR 60.670(a)(2) stand-alone screening operations at plants without crushers or grinding mills are exempt.
- (f) 40 CFR 60, Subpart UUU - Standards for Calciners and Dryers in Mineral Industries
The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU (3U) (326 IAC 12), are not included in the permit, because the stationary drum-mix, hot-mix asphalt plant still does not meet the definition of a mineral processing plant, since it does not process or produce any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.
- (g) 40 CFR 60, Subpart IIII - NSPS for Stationary Compression Ignition Internal Combustion Engines
(1) The requirements of the New Source Performance Standards (NSPS) for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE), 40 CFR Part 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit for the for the 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2) (manufactured and initially constructed in 2003), since although the unit was installed in 2011, construction commenced before July 11, 2005, and the generator was manufactured prior to April 1, 2006. Additionally, the unit has never been re-constructed. *Note: For the purposes of this rule, the date that construction commences is the date the engine is ordered by the original owner or operator.*
(2) The requirements of the New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit for the 20.5 hp gasoline-fired portable maintenance welding unit, since the welding unit is a spark ignition (SI) internal combustion engine (ICE) and not a compression ignition (CI) internal combustion engine (ICE).
(3) The requirements of the New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit for the 8.0 hp gasoline-fired portable emergency generator, since the emergency generator is a spark ignition (SI) internal combustion engine (ICE) and not a compression ignition (CI) internal combustion engine (ICE).
- (h) 40 CFR 60, Subpart JJJJ - NSPS for Stationary Spark Ignition Internal Combustion Engines
(1) The requirements of the New Source Performance Standard for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE), 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), since the screening unit is a compression ignition (CI) ICE and not a spark ignition (SI) ICE.
(2) The requirements of the New Source Performance Standard for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE), 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the 20.5 hp gasoline-fired spark ignition 4-stroke lean burn portable maintenance welding unit (manufactured and installed in 1995), since construction commenced before June 12, 2006, and the welding unit was manufactured prior to July 1, 2008. Additionally, the unit has never been re-constructed. *Note: For the purposes of this rule, the date that construction commences is the date the engine is ordered by the original owner or operator.*

- (3) The requirements of the New Source Performance Standard for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE), 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the 8 hp gasoline-fired, spark ignition, portable emergency generator (manufactured in 1999, and installed in 2000), since construction commenced before June 12, 2006, and the emergency generator was manufactured prior to July 1, 2008. Additionally, the unit has never been re-constructed. *Note: For the purposes of this rule, the date that construction commences is the date the engine is ordered by the original owner or operator.*
- (i) There are no other New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (a) 40 CFR 63, Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines
- (1) The 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), (< 500 HP) is subject the requirements of 40 CFR 63, Subpart ZZZZ (4Z), the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) (326 IAC 20-82), because it is considered an existing (construction commenced before June 12, 2006) stationary compression ignition (CI) RICE at an area source of hazardous air pollutants (HAP). Additionally, the unit has never been re-constructed. *For the purposes of this rule, the date that construction commenced is the date on-site fabrication, erection, or installation ("physical" construction) of the affected source (engine) started when the unit was brand new. A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.* The RAP Screening Unit was installed on-site in 2011; however, [initial] construction commenced in 2003.

The RAP Screening Unit is subject the following applicable portions of Subpart ZZZZ (4Z) (included as Attachment C of the permit), with a compliance date of May 3, 2013:

- | | |
|---|---------------------------------------|
| (1) 40 CFR 63.6580; | (8) 40 CFR 63.6640; |
| (2) 40 CFR 63.6585(a), (c), (d); | (9) 40 CFR 63.6655(a), (b), (d), (e); |
| (3) 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) 40 CFR 63.6660 |
| (4) 40 CFR 63.6595(a)(1), (b), (c); | (11) 40 CFR 63.6665 |
| (5) 40 CFR 63.6603(a); | (12) 40 CFR 63.6670 |
| (6) 40 CFR 63.6605; | (13) 40 CFR 63.6675 |
| (7) 40 CFR 63.6625(e)(4), (h), (i); | (14) Tables 2d and 8. |

Note: There are no testing requirements applicable to this source for this NESHAP.

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the RAP Screening Unit except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

Note: this is a new requirement for this source. This is a Title I change.

- (2) The 20 hp gasoline-fired spark ignition, 4-stroke lean burn, portable maintenance welding unit, (<500 HP) is subject to the requirements of the 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) (326 IAC 20-82), because it is considered an existing (construction commenced before June 12, 2006) stationary spark ignition (SI) RICE at an area source of hazardous air pollutants (HAP). Additionally, the welding unit has never been re-constructed. *For the purposes of this rule, the date that construction commenced is the date on-site fabrication, erection, or installation ("physical" construction) of the*

affected source (engine) at the site of the final operator started. The welding unit was initially constructed 1995.

The portable maintenance welding unit is subject the following applicable portions of the NESHAP for existing stationary SI RICE at an area source of HAP, with a compliance date of October 19, 2013:

- | | | | |
|-----|-------------------------------------|------|-----------------------------------|
| (1) | 40 CFR 63.6580; | (8) | 40 CFR 63.6640; |
| (2) | 40 CFR 63.6585(a), (c), (d); | (9) | 40 CFR 63.6655(a), (b), (d), (e); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) | 40 CFR 63.6660 |
| (4) | 40 CFR 63.6595(a)(1), (b), (c); | (11) | 40 CFR 63.6665 |
| (5) | 40 CFR 63.6603(a); | (12) | 40 CFR 63.6670 |
| (6) | 40 CFR 63.6605; | (13) | 40 CFR 63.6675 |
| (7) | 40 CFR 63.6625(e)(7), (h), (j); | (14) | Tables 2d and 8. |

Note: There are no testing requirements applicable to this existing SI RICE for this NESHAP. The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the portable maintenance welding unit except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

Note: this is a new requirement for this source. This is a Title I change.

- (3) The 8 hp gasoline-fired, spark ignition, portable emergency generator (<500 HP) is subject to the requirements of the 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) (326 IAC 20-82), because it is considered an existing (construction commenced before June 12, 2006) stationary spark ignition (SI) emergency RICE at an area source of hazardous air pollutants (HAP). Additionally, the emergency generator has never been re-constructed. *For the purposes of this rule, the date that construction commenced is the date on-site fabrication, erection, or installation (“physical” construction) of the affected source (engine) at the site of the final operator started.* The emergency generator was initially constructed in 2000.

The emergency generator is subject the following applicable portions of the NESHAP for existing stationary SI RICE at an area source of HAP, with a compliance date of October 19, 2013:

- | | | | |
|-----|--------------------------------------|------|--|
| (1) | 40 CFR 63.6580; | (8) | 40 CFR 63.6640; |
| (2) | 40 CFR 63.6585(a), (c), (d); | (9) | 40 CFR 63.6655(a), (b), (d), (e), (f); |
| (3) | 40 CFR 63.6590(a)(1)(iii) and (iv); | (10) | 40 CFR 63.6660 |
| (4) | 40 CFR 63.6595(a)(1), (b), (c); | (11) | 40 CFR 63.6665 |
| (5) | 40 CFR 63.6603(a); | (12) | 40 CFR 63.6670 |
| (6) | 40 CFR 63.6605; | (13) | 40 CFR 63.6675 |
| (7) | 40 CFR 63.6625(e)(3), (f), (h), (j); | (14) | Tables 2d and 8. |

Note: There are no testing requirements applicable to this existing SI RICE for this NESHAP.

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the emergency generator except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

Note: this is a new requirement for this source. This is a Title I change.

- (b) 40 CFR 63, Subpart DDDDD - NESHAPs for Industrial, Commercial, and Institutional Boilers and Process Heaters
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD (5D) (326 IAC 20), are not included in the permit, since this source is not a major source of HAPs, and is not located at nor is a part of a major source of HAP emissions.
- (c) 40 CFR 63, Subpart LLLLL - NESHAPs for Asphalt Processing and Asphalt Roofing Manufacturing
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (5L) (326 IAC 20-71), are not included in the permit, because the stationary drum-mix, hot-mix asphalt plant still does not meet the definition of an asphalt processing plant or an asphalt roofing manufacturing facility, since it does not engage in the preparation of asphalt flux or asphalt roofing materials. Additionally, it is not a major source of HAPs, and is not located at nor is it a part of a major source of HAP emissions.
- (d) 40 CFR 63, Subpart CCCCC - NESHAP for the Source Category Identified as Gasoline Dispensing Facilities (GDF)
The requirements of the National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, 40 CFR 63, Subpart CCCCC (6C) (326 IAC 20), are not included in the permit, because this stationary drum-mix, hot-mix asphalt plant, identified as EU-01, does not include any gasoline dispensing facilities, as defined under 40 CFR 63.11132.
- (e) 40 CFR 63, Subpart JJJJJ - NESHAPs for Industrial, Commercial, and Institutional Boilers Area Sources
- (1) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ (6J), are not included in the permit for the dryer/mixer burner, since although this existing source is an area source of hazardous air pollutants (HAP), as defined in §63.2, the dryer/mixer burner is a direct-fired process unit and not a boiler, as defined in 40 CFR 63.11237.
 - (2) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ (6J), are not included in the permit for the No. 2 distillate fuel oil fired hot oil heater, because although this existing source is an area source of hazardous air pollutants (HAP), as defined in §63.2, and the hot oil heater fires No. 2 distillate fuel oil, it does not meet the definition of a boiler, as defined in §63.11237, since heat transfer oil and not water is used as the indirect heating media.
 - (3) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ (6J), are not included in the permit for the 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, or the 8.0 hp gasoline-fired portable emergency generator, because each is an internal combustion engine (ICE) and not a boiler, as defined in 40 CFR 63.11237.
- (f) 40 CFR 63, Subpart AAAAAA - NESHAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart AAAAAA (7A) (326 IAC 20), are not included in the permit, because although the stationary drum-mix, hot-mix asphalt plant is an area source of hazardous air pollutant (HAP) emissions, as defined in §63.2, it does not meet the definition of an asphalt processing operation or an asphalt roofing manufacturing operation, as defined in §63.11566, since it does not engage in the preparation of asphalt flux or asphalt roofing materials.

- (g) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability - Entire Source

- (a) 326 IAC 1-6-3 (Preventive Maintenance Plan)
Pursuant to 326 IAC 1-6-3(a), a PMP is required for this facility and any associated control devices.
- (b) 326 IAC 1-7 (Stack Height)
The requirements of 326 IAC 1-7 (Stack Height) are not included in the permit because although the unlimited and uncontrolled PM10 and SO2 emissions from this existing source are each greater than one hundred (100) tons per year, asphalt concrete plants are specifically exempted under 326 IAC 1-7-5(c).
- (c) 326 IAC 2-1.1-5 (Nonattainment New Source Review)
Jasper County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, pursuant to 326 IAC 2-1.1-5, the Nonattainment New Source Review requirements do not apply, and are not included in the permit.
- (d) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.
- (e) 326 IAC 2-3 (Emission Offset)
Jasper County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply and are not included in the permit.
- (f) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit HAPs, from the existing hot-mix and cold-mix asphalt production operations, is still greater than ten (10) tons per year for any single HAP and greater than twenty-five (25) tons per year of a combination of HAPs. However, the source has agreed to continue to limit potential HAPs emissions from these facilities to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) still do not apply, see the "Potential to Emit after Issuance" section above, and are not included in the in the permit.
- (g) 326 IAC 2-6 (Emission Reporting)
This existing stationary source is still not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Jasper County, it is not required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program, and it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year. Therefore, pursuant to 326 IAC 2-6-1(b), the source is still only subject to additional information requests as provided for in 326 IAC 2-6-5.
- (h) 326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.

- (i) 326 IAC 5-1 (Opacity Limitations)
This existing stationary source is still subject to the opacity limitations specified in 326 IAC 5-1-2(1). Therefore, pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall continue to meet the following, unless otherwise stated in the permit:
- (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (j) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is still subject to the requirements of 326 IAC 6-4, because the asphalt load-out, silo filling, and on-site yard, material storage piles, material processing and handling, material screening, and conveying, and paved and unpaved roads, each, continue to have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the existing source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
- (k) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is still subject to the requirements of 326 IAC 6-5, because the asphalt load-out, silo filling, and on-site yard, material storage piles, material processing and handling, material screening, and conveying, and paved and unpaved roads were constructed after December 13, 1985, and continue to have potential fugitive particulate emissions greater than twenty-five (25) tons per year. Therefore, pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall continue to be controlled according to the Fugitive Particulate Emissions Control Plan, which is included as Attachment A to the permit.
- (l) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (m) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

State Rule Applicability – Individual Facilities

Drum-mix, Hot-Mix Asphalt Plant

- (a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The existing dryer burner is still not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for Indirect Heating". Therefore, the requirements of 326 IAC 6-2 still do not apply, and are not included in the permit.
- (b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The existing dryer/mixer is still subject to 40 CFR 60, Subpart I (Standards of Performance for Hot-mix Asphalt Facilities), incorporated by reference through 326 IAC 12. Therefore, pursuant to 326 IAC 6-3-1(c)(5), the existing dryer/mixer is still not subject to the requirements of 326 IAC 6-3 because it is subject to the more stringent particulate limit established in 326 IAC 12.
- (c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The existing dryer burner is still subject to 326 IAC 7-1.1 because its potential to emit SO₂ is equal to or greater than twenty-five (25) tons/year, or ten (10) pounds/hour, (unlimited potential emissions

are 258.69 tons per year). Therefore, pursuant to this rule, sulfur dioxide emissions from the dryer burner shall continue to be limited to:

- (A) Five-tenths (0.5) pounds per million Btu heat input for distillate oil combustion.
- (B) One and six tenths (1.6) pounds per million Btu heat input for residual oils.

Note: No. 2 fuel oil and No. 4 fuel oil are each considered distillate oils, and waste oil is considered residual oil.

See Appendices A.1 and A.2, for the detailed calculations.

(d) 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)

Pursuant to 326 IAC 7-2-1(c), the source shall continue to submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate (pounds SO₂ per MMBtu), to the OAQ upon request.

(e) 326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)

The unlimited potential VOC emissions from the existing dryer/mixer are greater than twenty-five (25) tons per year. However, the source has opted to continue to limit potential VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per year, therefore, rendering the requirements of 326 IAC 8-1-6 Best Available Control Technology (BACT) not applicable. *This is an existing requirement for this source;*

In order to render the requirements of 326 IAC 8-1-6 not applicable, the existing dryer/mixer shall be limited as follows:

- (1) The hot-mix asphalt production rate shall not exceed 975,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (2) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds of VOC per ton of asphalt produced.

Compliance with these limits shall limit the potential VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 BACT not applicable.

See Appendices A.1 and A.2, for the detailed calculations.

(f) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)

The existing dryer/mixer is still subject to 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities). Therefore, the requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) still do not apply to the hot-mix asphalt production and are not included in the permit.

(g) There are no other 326 IAC 8 Rules that are applicable to the drum-mix, hot-mix asphalt plant.

(h) 326 IAC 9-1 (Carbon Monoxide Emission Limits)

This existing stationary drum-mix, hot-mix asphalt plant is still not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 do not apply and are not included in the permit.

(i) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)

The existing one (1) 75.0 MMBtu/hr dryer burner still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it still has a maximum a heat input of less than

two hundred fifty million (250,000,000) British thermal units per hour (MMBtu/hr); therefore, it is still not subject to this rule and the requirements are not included in the permit.

Hot Oil Heating System

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The one (1) existing hot oil heater, constructed in 2008, having a maximum rated heat input capacity of 1.25 MMBtu/hr, is subject to 326 IAC 6-2-4 because it was constructed after the rule applicability date of September 21, 1983, and meets the definition of an indirect heating unit, as defined in 326 IAC 1-2-19, since it combusts fuel to produce usable heat that is to be transferred through a heat-conducting materials barrier or by a heat storage medium to a material to be heated so that the material being heated is not contacted by, and adds no substance to the products of combustion.

Pursuant to 326 IAC 6-2-4(a), for a total source maximum operating capacity rating of less than ten (10) MMBtu/hr, the pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input shall not exceed six tenths (0.6) pounds per MMBtu (lb/MMBtu).

Therefore, particulate emissions from the hot oil heater shall continue to not exceed six tenths (0.6) pounds per MMBtu heat input.

Based on Appendix A.1, and AP-42, the potential PM emission rate is 1.9 pounds per million cubic feet of natural gas, or 0.0019 lbs/MMBtu. Therefore, the hot oil heater is able to comply with this limit without the use of a control device.

See Appendix A.1 for the detailed calculations.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The one (1) existing hot oil heater is still not subject to the requirements of 326 IAC 6-3 because it is already otherwise subject to 326 IAC 6-2.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)

The unlimited potential to emit SO₂ from the one (1) existing hot oil heater is still less than twenty-five (25) tons/year and ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 still do not apply and are not included in the permit for this facility.

See Appendix A.1 for the detailed calculations.

(d) 326 IAC 9-1 (Carbon Monoxide Emission Limits)

The one (1) existing hot oil heater is still not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 (Carbon Monoxide Emission Limits) still do not apply and are not included in the permit.

(e) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)

The one (1) existing hot oil heater still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because the heater still has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu). Therefore, the requirements of 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category) still do not apply and are not included in the permit.

Reciprocating Internal Combustion Engines (RICE)

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, or the 8.0 hp gasoline-fired portable emergency generator are each not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for indirect

heating". Therefore, the requirements of 326 IAC 6-2 do not apply, and are not included in the permit.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

(1) The 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2) is considered part of the existing drum-mix, hot-mix asphalt plant under 40 CFR 60, Subpart I (Standards of Performance for Hot-mix Asphalt Facilities), incorporated by reference through 326 IAC 12. Therefore, pursuant to 326 IAC 6-3-1(c)(5), the RAP Screening Unit is not subject to the requirements of 326 IAC 6-3 because it is subject to the more stringent particulate limit established in 326 IAC 12.

(2) The 20.5 hp gasoline-fired portable maintenance welding unit, and the 8.0 hp gasoline-fired portable emergency generator, are each not a "manufacturing process" as defined under 326 IAC 6-3-1.5. Therefore, the requirements of 326 IAC 6-3 do not apply to the welding unit or the emergency generator and are not included in the permit for these units.

(c) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)

The unlimited potential to emit SO₂ from the 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, and the 8.0 hp gasoline-fired portable emergency generator, each, is less than twenty-five (25) tons per year and ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations) do not apply and are not included in the permit.

See Appendix A.1 for the detailed calculations.

(d) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)

The unlimited VOC potential emissions from the 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, and the 8.0 hp gasoline-fired portable emergency generator, each, are less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 (General Reduction Requirements for New Facilities) do not apply and are not included in the permit.

See Appendix A.1 for the detailed calculations.

(e) 326 IAC 9-1 (Carbon Monoxide Emission Limits)

The 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, and the 8.0 hp gasoline-fired portable emergency generator, are each not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 (Carbon Monoxide Emission Limits) still do not apply and are not included in the permit.

(f) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)

The 100.0 hp diesel fuel-fired, portable RAP Screening Unit (RC2), the 20.5 hp gasoline-fired portable maintenance welding unit, and the 8.0 hp gasoline-fired portable emergency generator, each do not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu). Therefore, the requirements of 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category) do not apply and are not included in the permit.

Cold-Mix Asphalt Production Operation

(a) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)

The existing cold-mix asphalt production operation is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving); therefore, the requirements of 326 IAC 8-1-6 BACT still do not apply to the cold-mix asphalt production and are not included in the permit.

See Appendices A.1 and A.2 for the detailed calculations.

- (b) 326 IAC 8-5-2 (Asphalt paving rules)
Any paving application made after January 1, 1980, is subject to the requirements of 326 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes:
- (a) penetrating prime coating;
 - (b) stockpile storage; and
 - (c) application during the months of November, December, January, February and March.
- (c) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The existing cold-mix asphalt production operation is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving). Therefore, the requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) still do not apply to the cold-mix asphalt production and are not included in the permit.
- See Appendix A.1 for the detailed calculations.
- (d) There are no other 326 IAC 8 Rules that are applicable to the cold-mix asphalt production operation.

Storage Tanks

- (a) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The potential to emit VOCs from each of the existing liquid asphalt storage tanks, identified as Tank A and Tank B, and the fuel oil storage tanks, identified as Tank C and Tank D, is still less than twenty-five (25) tons per year, therefore, the requirements of 326 IAC 8-1-6 still do not apply and are not included in the in the permit.
- See Appendix A.1 for the detailed calculations.
- (b) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The existing liquid asphalt storage tanks, Tank A and Tank B, and the fuel oil storage tanks, identified as Tank C and Tank D, each continue to have a maximum storage capacity of less than thirty-nine thousand (39,000) gallons. Therefore, are the requirements of 326 IAC 8-4-3 still do not apply to any of these tanks and are not included in the permit.
- (c) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
This existing stationary source is located in Jasper County, not Clark, Floyd, Lake, or Porter Counties. Therefore, the requirements of 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels) do not apply to the existing liquid asphalt storage tanks, Tank A and Tank B, or the fuel oil storage tanks, identified as Tank C and Tank D, and are not included in the permit.
- (d) There are no other 326 IAC 8 Rules that are applicable to the existing storage tanks or the gasoline fuel transfer and dispensing operation.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time- period.

Compliance Determination Requirements

- (a) The existing dryer/mixer has applicable compliance determination requirements as specified below:
 - (1) In order to comply with the PM, PM10, and PM2.5 limitations in the permit, the baghouse for the dryer/mixer, shall continue to be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation. *This is an existing requirement for this source.*
 - (2) The annual hot-mix asphalt production rate will be used to verify compliance with the PSD PM emission limitation, the FESOP PM10, PM2.5, SO2, VOC, and CO emission limitations, and the BACT avoidance VOC emission limitation. *This is an existing requirement for this source.*
 - (3) The slag and fuel characteristics (i.e., sulfur content) and usage rates will be used to verify compliance with the SO2 and HAPs emission limitations. *This is a new requirement for this source. This is a Title I change.*
 - (4) The waste oil characteristics (i.e., ash, chlorine, and lead content) and usage rates will be used to verify compliance with the FESOP PM, PM10, PM2.5, and HAP limitations. *This is an existing requirement for this source.*
- (b) The liquid binder characteristics (i.e., evaporation temperature) and usage rate, in the production of cold-mix cutback asphalt, will be used to verify compliance with the FESOP VOC emission limitation. *This is an existing requirement for this source.*

Testing Requirements

The testing requirements applicable to this source are as follows:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing
Dryer/mixer	Baghouse	PM/PM10/PM2.5	Within 5 yrs of last valid test ⁽¹⁾	Once every five (5) years
Dryer/mixer	N/A	SO2	Within 180 days after initial use of Blast Furnace slag ⁽²⁾	One time test

- (1) Required for compliance with 40 CFR 60, Subpart I and 326 IAC 2-8 (FESOP). The last valid dryer/mixer stack test for PM and PM10 occurred on June 25, 2009. The source was in compliance at that time. *This is an existing requirement for this source.*
- (2) Testing shall only be performed if the company has not previously performed SO2 testing while adding blast furnace slag to the aggregate mix at one of their other Indiana facilities. *This is a new requirement for this source. This is a Title I change.*

Compliance Monitoring Requirements

The existing drum mixer dryer/burner, baghouse stack exhaust, and the material processing and handling, crushing, screening, conveying, and material transfer points continue to have applicable compliance monitoring conditions as specified below:

Emission Unit & Control Device	Parameter	Frequency	Range	Excursions and Exceedances
Dryer/mixer baghouse stack exhaust (S1) ⁽¹⁾	Visible Emissions	Once per day	normal/abnormal	Response Steps
	Pressure Drop	Once per day	3.0 to 6.0 inches	Response Steps
Conveyors, screens, and material transfer points ⁽²⁾	Visible Emissions	Once per day	normal/abnormal	Response Steps

- (1) These monitoring conditions are necessary because the baghouse used in conjunction with the hot-mix dryer/mixer must operate properly to ensure continued compliance with 40 CFR 60, Subpart I, and 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable. *This is an existing requirement for this source.*
- (2) These monitoring conditions are necessary to ensure compliance with 40 CFR 60, Subpart I, and 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permit Program) not applicable. *This is an existing requirement for this source.*

Note: the new Rap Screening Unit is included under this existing requirement as a part of the drum-mix, hot-mix asphalt plant.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on November 26, 2012. Additional information was received on January 4, 2013, January 8, 2013, January 15, 2013, January 24, 2013, and February 4, 2013.

The operation of this existing drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation shall be subject to the conditions of the attached New Source Review and FESOP Renewal No. F073-32549-00041. The staff recommends to the Commissioner that the FESOP Renewal and New Source Review (NSR) be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Ms. Hannah Desrosiers at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-9327 or toll free at 1-800-451-6027 extension 3-9327.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A.1: Unlimited Emissions Calculations
Entire Source - Drum mix

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Asphalt Plant Maximum Capacity - Drum Mix

Maximum Hourly Asphalt Production =	225	ton/hr									
Maximum Annual Asphalt Production =	1,971,000	ton/yr									
Maximum Annual Blast Furnace Slag Usage =	827,820	ton/yr	1.50	% sulfur							
Maximum Annual Steel Slag Usage =	1,971,000	ton/yr	0.66	% sulfur							
Maximum Dryer Fuel Input Rate =	75.0	MMBtu/hr									
Natural Gas Usage =	657	MMCF/yr									
No. 2 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur							
No. 4 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur							
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur							
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur							
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur							
Used/Waste Oil Usage =	4,692,857	gal/yr, and	0.75	% sulfur	0.947	% ash	0.200	% chlorine,	0.0089	% lead	
Gasoline Usage - Generator < 250 HP =	10,260	gal/yr, and									
Diesel Fuel Usage - Generator < 600 HP =	44,749	gal/yr, and									
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0.00	% sulfur							
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production									
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production									
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production									
Unlimited SO2 Dryer/Mixer Emission Factor =	0.058	lb/ton of asphalt production									
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production									
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production									
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production									
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed									
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed									

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)									
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO ₂ e	Total HAPs	Worst Case HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case)	142.21	113.33	113.33	258.69	46.93	2.35	27.59	56,862.44	33.70	30.97 (hydrogen chloride)
Dryer/Mixer (Process)	27,594.00	6,405.75	1,478.25	57.16	54.20	31.54	128.12	32,769.85	10.50	3.06 (formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	306.29	0	0	0	0.00	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	1,095.00	0.013	0.010 (hexane)
Gasoline-Fired Generator < 250 HP (Maint. Welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	97.32	2.43E-03	7.42E-04 (formaldehyde)
Gasoline-Fired Generator < 250 HP (Emergency Gen.)	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.02	0.03	0.01	2.17	5.42E-05	1.65E-05 (formaldehyde)
Diesel-Fired Generator < 600 HP (RAP Screener)	0.96	0.96	0.96	0.90	13.58	1.10	2.93	505.38	0.012	3.62E-03 (formaldehyde)
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	NA
Worst Case Emissions*	27,595.11	6,406.91	1,479.41	568.72	69.57	34.04	132.14	58,562.31	33.73	30.97 (hydrogen chloride)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	1.09	1.09	1.09	0	0	16.88	2.84	0	0.28	0.09 (formaldehyde)
Material Storage Piles	3.74	1.31	1.31	0	0	0	0	0	0	0
Material Processing and Handling	6.37	3.01	0.46	0	0	0	0	0	0	0
Material Screening and Conveying	26.21	9.18	9.18	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	69.99	17.84	1.78	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	23,686.49	0	0	6,178.31	2,131.78 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	0
Total Fugitive Emissions	107.40	32.42	13.81	0	0	23,703.37	2.84	0	6,178.60	2,131.78 (xylenes)
Totals Unlimited/Uncontrolled PTE	27,702.51	6,439.33	1,493.22	568.72	69.57	23,737.42	134.98	58,562.31	6,212.32	2,131.78 (xylenes)

negl = negligible NA = not applicable
 Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.
 *Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Worst Case Emissions From Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP
 Fuel component percentages provided by the source.

Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Fuel Input Rate =	75	MMBtu/hr																
Natural Gas Usage =	657	MMCF/yr																
No. 2 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur														
No. 4 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur														
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur														
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur														
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur														
Used/Waste Oil Usage =	4,692,857	gal/yr, and	0.75	% sulfur	0.95	% ash	0.200	% chlorine,	0.009	% lead								

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)							Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual Fuel Oil (lb/kgal) (No. 5 or No. 6)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual Fuel Oil (tons/yr) (No. 5 or No. 6)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	
PM	1.9	2.0	7.0	3.22	0.5	0.6	60.6	0.62	4.69	16.43	0.00	0.00	0.00	142.21	142.21
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	48.297	2.50	7.74	19.48	0.00	0.00	0.00	113.33	113.33
SO2	0.6	71.0	75.0	0.0	0.000	0.000	110.3	0.20	166.60	175.98	0.00	0.00	0.00	258.69	258.69
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	32.85	46.93	46.93	0.00	0.00	0.00	44.58	46.93
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	1.81	0.47	0.47	0.00	0.00	0.00	2.35	2.35
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	27.59	11.73	11.73	0.00	0.00	0.00	11.73	27.59
Hazardous Air Pollutant							13.2							30.97	30.97
HCl							negl							negl	0.0123188
Antimony			5.25E-03	5.25E-03						1.23E-02	0.00E+00			negl	0.258
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03				6.6E-05	1.31E-03	3.10E-03	0.00E+00			2.58E-01	0.258
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05				3.9E-06	9.86E-04	6.52E-05	0.00E+00			negl	9.9E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04				9.3E-03	3.6E-04	9.86E-04	9.34E-04	0.00E+00		2.18E-02	0.022
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04				2.0E-02	4.6E-04	9.86E-04	1.98E-03	0.00E+00		4.69E-02	0.047
Cobalt	8.4E-05		6.02E-03	6.02E-03				2.1E-04	2.8E-05		1.41E-02	0.00E+00		4.93E-04	1.4E-02
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03				0.4895	1.6E-04	2.96E-03	3.54E-03	0.00E+00		1.1E+00	1.15
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03				6.8E-02	1.2E-04	1.97E-03	7.04E-03	0.00E+00		1.60E-01	0.16
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				8.5E-05	9.86E-04	2.65E-04	0.00E+00			9.9E-04	9.9E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02				1.1E-02	6.9E-04	9.86E-04	1.98E-01	0.00E+00		2.58E-02	0.198
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04				negl	7.9E-06	4.93E-03	1.60E-03	0.00E+00		negl	4.9E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04							5.54E-04	0.00E+00			0.0005538
1,3-Butadiene															0
Acetaldehyde															0
Acrolein															0
Benzene	2.1E-03		2.14E-04	2.14E-04				6.9E-04		5.02E-04	0.00E+00				6.9E-04
Bis(2-ethylhexyl)phthalate								2.2E-03						5.16E-03	5.2E-03
Dichlorobenzene	1.2E-03							8.0E-07	3.9E-04					1.88E-06	3.9E-04
Ethylbenzene			6.36E-05	6.36E-05						1.49E-04	0.00E+00				0.0001492
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				2.5E-02	1.43E-01	7.74E-02	0.00E+00				0.143
Hexane	1.8E+00							0.59							0.591
Phenol								2.4E-03						5.63E-03	5.6E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				1.1E-03		1.45E-02	0.00E+00				1.5E-02
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02	negl	2.65E-03	0.00E+00			9.17E-02	0.092
Polycyclic Organic Matter		3.30E-03							7.74E-03						7.7E-03
Xylene			1.09E-04	1.09E-04						2.56E-04	0.00E+00				0.0002558
Total HAPs								0.62	0.17	0.34	0.00	0	0	32.74	33.70

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (< 2.5 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO2e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Fuel Input Rate =	75	MMBtu/hr						
Natural Gas Usage =	657	MMCF/yr						
No. 2 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur				
No. 4 Fuel Oil Usage =	4,692,857	gal/yr, and	0.50	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur				
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Used/Waste Oil Usage =	4,692,857	gal/yr, and	0.75	% sulfur	0.95	% ash	0.200	% chlorine, 0.009 % lead

Unlimited/Uncontrolled Emissions

CO2e Fraction	Emission Factor (units)								Global Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential	
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15	Carbon dioxide	CO ₂	1	
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH ₄	21	
N2O	2.2	0.26	0.19	0.53	0.9	0.9	0.18	Nitrous oxide	N ₂ O	310	

CO2e Fraction	Unlimited/Uncontrolled Potential to Emit (tons/yr)							
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)	
CO2	39,473.17	52,797.95	56,674.38	0.00	0.00	0.00	51,678.10	
CH4	0.82	2.14	2.27	0.00	0.00	0.00	2.10	
N2O	0.72	0.61	0.45	0.00	0.00	0.00	0.42	
Total	39,474.71	52,800.70	56,677.10	0.00	0.00	0.00	51,680.62	

CO2e for Worst Case Fuel (tons/yr)
56,862.44

CO2e Equivalent Emissions (tons/yr)	39,714.40	53,032.05	56,862.44	0.00	0.00	0.00	51,853.03
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Methodology

Fuel Usage from TSD Appendix A.1, page 1 of 14.
 Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0915 MMBtu]
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.102 MMBtu]
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Abbreviations

PTE = Potential to Emit
 CO2 = Carbon Dioxide
 CH4 = Methane
 N2O = Nitrogen Dioxide

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

- Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2
- No. 2, No. 4, and Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8
- Propane: Emission Factor for CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, has been converted from kg/mmBtu to lb/kgal. Emission Factors for CO2 and N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1
- Butane: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1
- Waste Oil: Emission Factors for CO2, CH4, and N2O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]
 Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (310).

**Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Process Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production = ton/hr
 Maximum Annual Asphalt Production = ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	27,594	27,594	27,594	27,594
PM10*	6.5	6.5	6.5	6,406	6,406	6,406	6,406
PM2.5*	1.5	1.5	1.5	1,478	1,478	1,478	1,478
SO2**	0.0034	0.011	0.058	3.4	10.8	57.2	57.2
NOx**	0.026	0.055	0.055	25.6	54.2	54.2	54.2
VOC**	0.032	0.032	0.032	31.5	31.5	31.5	31.5
CO***	0.13	0.13	0.13	128.1	128.1	128.1	128.1
Hazardous Air Pollutant							
HCl			2.10E-04			2.07E-01	0.21
Antimony	1.80E-07	1.80E-07	1.80E-07	1.77E-04	1.77E-04	1.77E-04	1.77E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	5.52E-04	5.52E-04	5.52E-04	5.52E-04
Beryllium	negl	negl	negl	negl	negl	negl	0
Cadmium	4.10E-07	4.10E-07	4.10E-07	4.04E-04	4.04E-04	4.04E-04	4.04E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	5.42E-03	5.42E-03	5.42E-03	5.42E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	2.56E-05	2.56E-05	2.56E-05	2.56E-05
Lead	6.20E-07	1.50E-05	1.50E-05	6.11E-04	1.48E-02	1.48E-02	1.48E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	7.59E-03	7.59E-03	7.59E-03	7.59E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	2.37E-04	2.56E-03	2.56E-03	2.56E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.06	0.06	0.06	0.06
Selenium	3.50E-07	3.50E-07	3.50E-07	3.45E-04	3.45E-04	3.45E-04	3.45E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.04	0.04	0.04	0.04
Acetaldehyde			1.30E-03			1.28	1.28
Acrolein			2.60E-05			2.56E-02	0.03
Benzene	3.90E-04	3.90E-04	3.90E-04	0.38	0.38	0.38	0.38
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.24	0.24	0.24	0.24
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	3.06	3.06	3.06	3.06
Hexane	9.20E-04	9.20E-04	9.20E-04	0.91	0.91	0.91	0.91
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.05	0.05	0.05	0.05
MEK			2.00E-05			0.02	0.02
Propionaldehyde			1.30E-04			0.13	0.13
Quinone			1.60E-04			0.16	0.16
Toluene	1.50E-04	2.90E-03	2.90E-03	0.15	2.86	2.86	2.86
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.19	0.87	0.87	0.87
Xylene	2.00E-04	2.00E-04	2.00E-04	0.20	0.20	0.20	0.20

Methodology
 Total HAPs 10.50
 Worst Single HAP 3.06 (formaldehyde)

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12
 Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

Abbreviations

PM = Particulate Matter SO2 = Sulfur Dioxide CO = Carbon Monoxide PAH = Polyaromatic Hydrocarbon
 PM10 = Particulate Matter (<10 um) NOx = Nitrous Oxides HAP = Hazardous Air Pollutant
 PM2.5 = Particulate Matter (< 2.5 um) VOC = Volatile Organic Compounds HCl = Hydrogen Chloride

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production = 225 ton/hr
 Maximum Annual Asphalt Production = 1,971,000 ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO ₂ e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO ₂	33	33	33	1	32,521.50	32,521.50	32,521.50	32,769.85
CH ₄	0.0120	0.0120	0.0120	21	11.83	11.83	11.83	
N ₂ O				310	0	0	0	
Total					32,533.33	32,533.33	32,533.33	
CO ₂ e Equivalent Emissions (tons/yr)					32,769.85	32,769.85	32,769.85	

Methodology

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N₂O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N₂O emission anticipated from this process.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CO₂ = Carbon Dioxide CH₄ = Methane N₂O = Nitrogen Dioxide PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Slag Processing**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited emissions from the processing of slag in the aggregate drying/mixing

Maximum Annual Blast Furnace Slag Usage =

827,820

 ton/yr

1.50

 % sulfur
Maximum Annual Steel Slag Usage =

1,971,000

 ton/yr

0.66

 % sulfur

Type of Slag	SO ₂ Emission Factor (lb/ton)	Unlimited Potential to Emit SO ₂ (tons/yr)
Blast Furnace Slag*	0.74	306.29
Steel Slag**	0.0014	1.38

Methodology

The maximum annual slag usage was provided by the source.

* Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Unlimited Potential to Emit SO₂ from Slag (tons/yr) = [(Maximum Annual Slag Usage (ton/yr)) * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations

SO₂ = Sulfur Dioxide

Appendix A.1: Unlimited Emissions Calculations
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
Hot Oil Heater

Company Name: Babcock Paving, Inc.
Source Location: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 1.25 MMBtu/hr
 Natural Gas Usage = 11 MMCF/yr
 No. 2 Fuel Oil Usage = 78,214 gal/yr, and 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.010	0.078	0.08
PM10/PM2.5	7.6	3.3	0.042	0.129	0.13
SO2	0.6	71.0	0.003	2.777	2.78
NOx	100	20.0	0.548	0.782	0.78
VOC	5.5	0.20	0.030	0.008	0.03
CO	84	5.0	0.460	0.196	0.46
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.1E-06	2.19E-05	2.2E-05
Beryllium	1.2E-05	4.2E-04	6.6E-08	1.64E-05	1.6E-05
Cadmium	1.1E-03	4.2E-04	6.0E-06	1.64E-05	1.6E-05
Chromium	1.4E-03	4.2E-04	7.7E-06	1.64E-05	1.6E-05
Cobalt	8.4E-05		4.6E-07		4.6E-07
Lead	5.0E-04	1.3E-03	2.7E-06	4.93E-05	4.9E-05
Manganese	3.8E-04	8.4E-04	2.1E-06	3.29E-05	3.3E-05
Mercury	2.6E-04	4.2E-04	1.4E-06	1.64E-05	1.6E-05
Nickel	2.1E-03	4.2E-04	1.1E-05	1.64E-05	1.6E-05
Selenium	2.4E-05	2.1E-03	1.3E-07	8.21E-05	8.2E-05
Benzene	2.1E-03		1.1E-05		1.1E-05
Dichlorobenzene	1.2E-03		6.6E-06		6.6E-06
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	4.1E-04	2.39E-03	2.4E-03
Hexane	1.8E+00		9.9E-03		9.9E-03
Phenol					0
Toluene	3.4E-03		1.9E-05		1.9E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		1.29E-04	1.3E-04
Total HAPs =			1.0E-02	2.8E-03	0.013
Worst Single HAP =			9.9E-03	2.4E-03	9.9E-03
			(Hexane)	(Formaldehyde)	(Hexane)

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4

No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

SO2 = Sulfur Dioxide

NOx = Nitrous Oxides

VOC - Volatile Organic Compounds

CO = Carbon Monoxide

HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride

PAH = Polyaromatic Hydrocarbon

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 1.25 MMBtu/hr
 Natural Gas Usage = 11 MMCF/yr
 No. 2 Fuel Oil Usage = 78,214 gal/yr, 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)
CO ₂	120,161.84	22,501.41	1	657.89	879.97
CH ₄	2.49	0.91	21	0.01	0.04
N ₂ O	2.2	0.26	310	0.01	0.01
				657.91	880.01

Worse Case CO₂e Emissions (tons/yr)
883.87

CO ₂ e Equivalent Emissions (tons/yr)	661.91	883.87
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Methodology

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2 Fuel Oil: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CO₂ = Carbon Dioxide
 CH₄ = Methane

N₂O = Nitrogen Dioxide
 PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Hot Oil Heating System - Process Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater = 1.25 MMBtu/hr
 Natural Gas Usage = 10.95 MMCF/yr, and
 No. 2 Fuel Oil Usage = 78,214.29 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	1.42E-04	0.001	1.04E-03
CO	8.90E-06	0.0012	0.049	0.047	0.049
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1,095.00	1,095.00	1,095.00
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	1.42E-04	1.37E-04	1.42E-04
Acenaphthene		5.30E-07		2.07E-05	2.07E-05
Acenaphthylene		2.00E-07		7.82E-06	7.82E-06
Anthracene		1.80E-07		7.04E-06	7.04E-06
Benzo(b)fluoranthene		1.00E-07		3.91E-06	3.91E-06
Fluoranthene		4.40E-08		1.72E-06	1.72E-06
Fluorene		3.20E-08		1.25E-06	1.25E-06
Naphthalene		1.70E-05		6.65E-04	6.65E-04
Phenanthrene		4.90E-06		1.92E-04	1.92E-04
Pyrene		3.20E-08		1.25E-06	1.25E-06

Total HAPs 1.04E-03
Worst Single HAP 6.65E-04 (Naphthalene)

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)

No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N2O available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations

CO = Carbon Monoxide

VOC = Volatile Organic Compound

CO2 = Carbon Dioxide

**Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines
Gasoline-Fired Maintenance Welding Unit
Output Rating (<=250 HP)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	20.5
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	179,580
Maximum Gasoline Usage (gal/yr)	10,036

	Pollutant						
	PM ^{2.5}	PM10 ²	direct PM2.5 ²	SO ₂	NO _x	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal ¹	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Potential Emission in tons/yr	0.06	0.06	0.06	0.05	0.99	1.35	0.62

¹ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

² PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs ³
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Potential Emission in tons/yr	5.86E-04	2.57E-04	1.79E-04	2.46E-05	7.42E-04	4.82E-04	5.81E-05	1.06E-04

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	2.43E-03
Potential Emission of Worst Case HAPs (tons/yr)	7.42E-04

Green House Gas Emissions (GHG)

	Pollutant		
	CO ₂ ⁵	CH ₄ ⁶	N ₂ O ⁶
Emission Factor in lb/hp-hr	1.08	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	19,324.44	0.83	0.17
Potential Emission in tons/yr	96.97	4.16E-03	8.31E-04

⁵ The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, the gasoline heating value of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

⁶ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using a gasoline heating value of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	96.98
CO₂e Total in tons/yr	97.32

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Gasoline Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/20,300 (lb/Btu) * 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH₄ and N₂O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO₂e (tons/yr) = CO₂ Potential Emission ton/yr x CO₂ GWP (1) + CH₄ Potential Emission ton/yr x CH₄ GWP (21) + N₂O Potential Emission ton/yr x N₂O GWP (310).

Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines
Gasoline-Fired Emergency Generator
Output Rating (<=250 HP)

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	8.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	4,000
Maximum Gasoline Usage (gal/yr)	224

	Pollutant						
	PM ^{2.5}	PM10 ^{2.5}	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal ¹	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Potential Emission in tons/yr	1.44E-03	1.44E-03	1.44E-03	1.18E-03	2.20E-02	3.00E-02	1.39E-02

¹ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

² PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Potential Emission in tons/yr	1.31E-05	5.73E-06	3.99E-06	5.47E-07	1.65E-05	1.07E-05	1.30E-06	2.35E-06

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	5.42E-05
Potential Emission of Worst Case HAPs (tons/yr)	1.65E-05

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ⁶	N2O ⁶
Emission Factor in lb/hp-hr	1.08	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	19,324.44	0.83	0.17
Potential Emission in tons/yr	2.16	9.26E-05	1.85E-05

⁵ The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, the gasoline heating value of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

⁶ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using a gasoline heating value of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	2.16
CO2e Total in tons/yr	2.17

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Gasoline Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/20,300 (lb/Btu) * 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines
Diesel Fuel-Fired RAP Screening Unit
Output Rating (<=600 HP)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Number: F073-26569-00041
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	100.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	876,000
Maximum Diesel Fuel Usage (gal/yr)	44,749

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO ₂	NO _x	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	0.96	0.96	0.96	0.90	13.58	1.10	2.93

¹The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

²PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	2.86E-03	1.25E-03	8.74E-04	1.20E-04	3.62E-03	2.35E-03	2.84E-04	5.15E-04

³PAH = Polycyclic Aromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	1.19E-02
Potential Emission of Worst Case HAPs (tons/yr)	3.62E-03

Green House Gas Emissions (GHG)

	Pollutant		
	CO ₂ ⁵	CH ₄ ⁶	N ₂ O ⁶
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Potential Emission in tons/yr	503.70	0.020	0.004

⁵The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	503.72
CO₂e Total in tons/yr	505.38

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH₄ and N₂O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO₂e (tons/yr) = CO₂ Potential Emission ton/yr x CO₂ GWP (1) + CH₄ Potential Emission ton/yr x CH₄ GWP (21) + N₂O Potential Emission ton/yr x N₂O GWP (310).

**Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines
Large Diesel Fuel-Fired Unit
Output Rating (>600 HP)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Number: F073-26569-00041
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0	Sulfur Content (S) of Fuel (% by weight)	0.00
Maximum Hours Operated per Year	8760		
Potential Throughput (hp-hr/yr)	0		
Maximum Diesel Fuel Usage (gal/yr)	0		

	Pollutant						
	PM	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00809S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal ¹	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

²Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

²Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

²Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs ³
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal ⁴	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	0.00E+00
Potential Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ^{5,6}	N2O ⁷
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Potential Emission in tons/yr	0.00	0.00	0.00

⁵The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

⁷The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁷Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
 Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)
 Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.
 N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A.1: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	1,971,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.51	0.58	NA	1.09
Organic PM	3.4E-04	2.5E-04	NA	0.34	0.250	NA	0.59
TOC	0.004	0.012	0.001	4.10	12.01	1.084	17.2
CO	0.001	0.001	3.5E-04	1.33	1.163	0.347	2.84

NA = Not Applicable (no AP-42 Emission Factor)

PM/HAPs	0.024	0.028	0	0.052
VOC/HAPs	0.061	0.153	0.016	0.229
non-VOC/HAPs	3.2E-04	3.2E-05	8.3E-05	4.3E-04
non-VOC/non-HAPs	0.30	0.17	0.08	0.55

Total VOCs	3.85	12.01	1.0	16.9
Total HAPs	0.08	0.18	0.016	0.28
Worst Single HAP				0.087
				(formaldehyde)

Methodology

The asphalt temperature and volatility factor were provided by the source.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14):

Total PM/PM10/PM2.5 Ef = 0.000181 + 0.00141(-V)e^{-(0.0251)(T+460)-20.43}
 Organic PM Ef = 0.00141(-V)e^{-(0.0251)(T+460)-20.43}
 TOC Ef = 0.0172(-V)e^{-(0.0251)(T+460)-20.43}
 CO Ef = 0.00558(-V)e^{-(0.0251)(T+460)-20.43}

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):

PM/PM10 Ef = 0.000332 + 0.00105(-V)e^{-(0.0251)(T+460)-20.43}
 Organic PM Ef = 0.00105(-V)e^{-(0.0251)(T+460)-20.43}
 TOC Ef = 0.0504(-V)e^{-(0.0251)(T+460)-20.43}
 CO Ef = 0.00488(-V)e^{-(0.0251)(T+460)-20.43}

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations

TOC = Total Organic Compounds
 CO = Carbon Monoxide
 PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 HAP = Hazardous Air Pollutant
 VOC = Volatile Organic Compound

**Appendix A.1: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	8.7E-04	1.2E-03	NA	2.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	9.4E-05	3.5E-05	NA	1.3E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	2.4E-04	3.3E-04	NA	5.6E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	6.4E-05	1.4E-04	NA	2.0E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	2.6E-05	0	NA	2.6E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	7.4E-06	0	NA	7.4E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	6.4E-06	0	NA	6.4E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	7.7E-06	0	NA	7.7E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	2.6E-05	2.4E-05	NA	5.0E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	3.5E-04	5.3E-04	NA	8.7E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	1.2E-06	0	NA	1.2E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.7E-04	0	NA	1.7E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	2.6E-03	2.5E-03	NA	5.1E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.6E-06	0	NA	1.6E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	8.0E-03	1.3E-02	NA	0.021
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	4.2E-03	4.6E-03	NA	8.8E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	7.4E-05	7.5E-05	NA	1.5E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	2.7E-03	4.5E-03	NA	7.2E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	5.0E-04	1.1E-03	NA	1.6E-03
Total PAH HAPs							0.020	0.028	NA	0.048
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	4.0E-03	0	0	4.0E-03

NA = Not Applicable (no AP-42 Emission Factor)

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter

**Appendix A.1: Unlimited Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)**

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	3.85	12.01	1.02	16.88
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	2.7E-01	3.1E-02	7.0E-02	0.368
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.9E-03	6.6E-03	5.0E-04	0.009
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	2.9E-02	1.3E-01	7.7E-03	0.169
Total non-VOC/non-HAPS					7.30%	1.40%	0.299	0.168	0.079	0.55
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	2.1E-03	3.8E-03	5.6E-04	6.5E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	3.9E-04	5.9E-04	1.0E-04	1.1E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	2.0E-03	4.7E-03	5.3E-04	7.2E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	5.3E-04	1.9E-03	1.4E-04	2.6E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	8.6E-06	4.8E-04	2.3E-06	4.9E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	6.1E-04	2.8E-03	1.6E-04	3.5E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	4.5E-03	0	1.2E-03	5.7E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	1.1E-02	4.6E-03	3.0E-03	0.019
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	3.6E-03	8.3E-02	9.5E-04	0.087
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	6.1E-03	1.2E-02	1.6E-03	0.020
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	7.4E-05	3.7E-05	2.0E-05	1.3E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	3.2E-05	0	3.2E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	3.0E-04	6.5E-04	7.9E-05	1.0E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	3.2E-04	0	8.3E-05	4.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	8.6E-03	7.4E-03	2.3E-03	0.018
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	5.3E-05	0	1.4E-05	6.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.7E-02	2.4E-02	4.4E-03	0.045
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	3.3E-03	6.8E-03	8.7E-04	0.011
Total volatile organic HAPs					1.50%	1.30%	0.061	0.156	0.016	0.234

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

TOC = Total Organic Compounds

VOC = Volatile Organic Compound

HAP = Hazardous Air Pollutant

MTBE = Methyl tert butyl ether

Appendix A.1: Unlimited Emissions Calculations Material Storage Piles

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

where E_f = emission factor (lb/acre/day)
 s = silt content (wt %)
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.75	0.412	0.144
Limestone	1.6	1.85	3.75	1.267	0.444
RAP	0.5	0.58	1.25	0.132	0.046
Gravel	1.6	1.85	0.75	0.253	0.089
Slag	3.8	4.40	2.00	1.605	0.562
Shingles	0.5	0.58	0.62	0.065	0.023
Totals				3.74	1.31

Methodology

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum anticipated pile size (acres) provided by the source. The pile size of the slag and shingles were provided in tons and have been converted to acres based on the assumption that the piles are at maximum 8.5 feet in height.

PM2.5 = PM10

Abbreviations

RAP - recycled asphalt pavement
 PM = Particulate Matter

PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Material Processing, Handling, Crushing, Screening, and Conveying**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^M \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

where: E_f = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter ≤ 100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter ≤ 10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter ≤ 2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
E_f (PM) =	2.27E-03	lb PM/ton of material handled
E_f (PM10) =	1.07E-03	lb PM10/ton of material handled
E_f (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production = 1,971,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 1,872,450 tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	2.12	1.00	0.15
Front-end loader dumping of materials into feeder bins	2.12	1.00	0.15
Conveyor dropping material into dryer/mixer or batch tower	2.12	1.00	0.15
Total (tons/yr)	6.37	3.01	0.46

Methodology

The percent asphalt cement/binder provided by the source.
 Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives
 *Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 11.19.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	0.00	0.00
Screening	0.025	0.0087	23.41	8.15
Conveying	0.003	0.0011	2.81	1.03
Unlimited Potential to Emit (tons/yr) =			26.21	9.18

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2 2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate matter (< 2.5 um)
 PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Unpaved Roads**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Maximum Annual Asphalt Production	= 1,971,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	= 5.0%	
Maximum Material Handling Throughput	= 1,872,450	tons/yr
Maximum Asphalt Cement/Binder Throughput	= 98,550	tons/yr
Maximum No. 2 Fuel Oil Usage	= 4,692,857	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	8.4E+04	3.3E+06	300	0.057	4749.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	8.4E+04	1.4E+06	300	0.057	4749.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	2.7E+03	1.3E+05	300	0.057	155.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.7E+03	3.3E+04	300	0.057	155.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	5.0E+02	2.2E+04	300	0.057	28.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	5.0E+02	5.9E+03	300	0.057	28.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	4.5E+05	8.6E+06	300	0.057	25330.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	4.5E+05	6.7E+06	300	0.057	25330.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	8.2E+04	3.4E+06	300	0.057	4666.2
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	8.2E+04	1.4E+06	300	0.057	4666.2
Total					1.2E+06	2.5E+07			7.0E+04

Average Vehicle Weight Per Trip	= 20.3	tons/trip
Average Miles Per Trip	= 0.057	miles/trip

Unmitigated Emission Factor, $E_f = k \cdot [s^{12}/a^3] \cdot [(W/3)^b]$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext}	4.01	1.02	0.10	lb/mile
Dust Control Efficiency	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	14.47	3.69	0.37	9.52	2.43	0.24	4.76	1.21	0.12
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	14.47	3.69	0.37	9.52	2.43	0.24	4.76	1.21	0.12
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.474	0.121	0.01	0.312	0.079	0.01	0.156	0.040	0.00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.474	0.121	0.01	0.312	0.079	0.01	0.156	0.040	0.00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.086	0.022	0.00	0.056	0.014	0.00	0.028	0.007	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.086	0.022	0.00	0.056	0.014	0.00	0.028	0.007	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	77.20	19.67	1.97	50.76	12.94	1.29	25.38	6.47	0.65
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	77.20	19.67	1.97	50.76	12.94	1.29	25.38	6.47	0.65
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	14.22	3.62	0.36	9.35	2.38	0.24	4.68	1.19	0.12
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	14.22	3.62	0.36	9.35	2.38	0.24	4.68	1.19	0.12
Totals		212.90	54.26	5.43	139.99	35.68	3.57	69.99	17.84	1.78

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Paved Roads**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Annual Asphalt Production	= 1,971,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	= 5.0%	
Maximum Material Handling Throughput	= 1,872,450	tons/yr
Maximum Asphalt Cement/Binder Throughput	= 98,550	tons/yr
Maximum No. 2 Fuel Oil Usage	= 4,692,857	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	8.4E+04	3.3E+06	300	0.057	4749.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	8.4E+04	1.4E+06	300	0.057	4749.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.7E+03	1.3E+05	300	0.057	155.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.7E+03	3.3E+04	300	0.057	155.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	5.0E+02	2.2E+04	300	0.057	28.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	5.0E+02	5.9E+03	300	0.057	28.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	4.5E+05	8.6E+06	300	0.057	25330.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	4.5E+05	6.7E+06	300	0.057	25330.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	8.2E+04	3.4E+06	300	0.057	4666.2
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	8.2E+04	1.4E+06	300	0.057	4666.2
Total					1.2E+06	2.5E+07			7.0E+04

Average Vehicle Weight Per Trip	= 20.3	tons/trip
Average Miles Per Trip	= 0.057	miles/trip

Unmitigated Emission Factor, $E_f = [k \cdot (sL)^{0.91} \cdot (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E_f \cdot [1 - (p/4N)]$

Mitigated Emission Factor, E_{ext}	= $E_f \cdot [1 - (p/4N)]$	
where p =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N =	365	days per year

Unmitigated Emission Factor, E_f		PM	PM10	PM2.5	lb/mile
Mitigated Emission Factor, E_{ext}		0.15	0.03	0.01	lb/mile
Dust Control Efficiency	=	0.14	0.03	0.01	lb/mile
		50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.012	0.002	5.7E-04	0.011	0.002	5.2E-04	0.005	1.1E-03	2.6E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.012	0.002	5.7E-04	0.011	0.002	5.2E-04	0.005	1.1E-03	2.6E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	2.1E-03	4.2E-04	1.0E-04	1.9E-03	3.8E-04	9.4E-05	9.6E-04	1.9E-04	4.7E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	2.1E-03	4.2E-04	1.0E-04	1.9E-03	3.8E-04	9.4E-05	9.6E-04	1.9E-04	4.7E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	1.88	0.38	0.09	1.72	0.34	0.08	0.86	0.17	0.04
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.88	0.38	0.09	1.72	0.34	0.08	0.86	0.17	0.04
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.35	0.07	0.02	0.32	0.06	0.02	0.16	0.03	0.01
Totals		5.20	1.04	0.26	4.75	0.95	0.23	2.38	0.48	0.12

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations Cold Mix Asphalt Production and Stockpiles

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Maximum Annual Asphalt Production =	1,971,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Asphalt Cement/Binder Throughput =	98,550	tons/yr

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder*	Weight % VOC solvent in binder that evaporates	Maximum VOC Solvent Usage (tons/yr)	PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	24,933.2	23,686.5
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	28,185.3	19,729.7
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	19,710.0	4,927.5
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	14,782.5	6,859.1
Other asphalt with solvent binder	25.9%	2.5%	25,524.5	638.1
Worst Case PTE of VOC =				23,686.5

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
PTE of Total HAPs (tons/yr) =	6,178.31
PTE of Single HAP (tons/yr) =	2,131.78 Xylenes

Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents*

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
Total Organic HAPs		26.08%	0.33%	1.29%	0.68%	0.19%
Worst Single HAP		9.00%	0.31%	0.50%	0.23%	0.07%
		Xylenes	Naphthalene	Xylenes	Xylenes	Chrysene

Methodology

Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds
PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations Gasoline Fuel Transfer and Dispensing Operation

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= \frac{0}{0.0} \text{ gallons/day} \\ &= \text{0.0 kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
Total		0.00

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00
Limited PTE of Single HAP (tons/yr) =	0.00 Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Entire Source - Drum Mix**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Asphalt Plant Limitations - Drum Mix

Maximum Hourly Asphalt Production =	225	ton/hr									
Annual Asphalt Production Limitation =	975,000	ton/yr									
Blast Furnace Slag Usage Limitation =	50,000	ton/yr	1.50	% sulfur							
Steel Slag Usage Limitation =	975,000		0.66	% sulfur							
Maximum Dryer Fuel Input Rate =	75.0	MMBtu/hr									
Natural Gas Limitation =	657	MMCF/yr									
No. 2 Fuel Oil Limitation =	2,075,246	gal/yr, and	0.50	% sulfur							
No. 4 Fuel Oil Limitation =	1,964,567	gal/yr, and	0.50	% sulfur							
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur							
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur							
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur							
Used/Waste Oil Limitation =	1,336,440	gal/yr, and	0.75	% sulfur	0.947	% ash	0.200	% chlorine,	0.0089	% lead	
Gasoline Limitation - Generator < 250 HP =	10,260	gal/yr, and									
Diesel Fuel Limitation - Generator < 600 HP =	44,749	gal/yr, and									
Diesel Fuel Limitation - Generator > 600 HP =	0	gal/yr	0	% sulfur							
PM Dryer/Mixer Limitation =	0.360	lb/ton of asphalt production									
PM10 Dryer/Mixer Limitation =	0.160	lb/ton of asphalt production									
PM2.5 Dryer/Mixer Limitation =	0.179	lb/ton of asphalt production									
SO2 Dryer/Mixer Limitation =	0.058	lb/ton of asphalt production									
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production									
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production									
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production									
Blast Furnace Slag SO2 Dryer/Mixer Limitation =	0.740	lb/ton of slag processed									
Steel Slag SO2 Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed									
Cold Mix Asphalt VOC Limitation =	52.50	tons/yr									
HCl Limitation =	13.20	lb/kgal									

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO _{2e}	Total HAPs	Worst Case HAP	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	40.50	32.27	32.27	73.67	32.85	1.81	27.59	39,714.40	10.08	8.82	(hydrogen chloride)
Dryer/Mixer (Process)	185.25	78.00	87.26	28.28	26.81	15.60	63.38	16,210.35	5.20	1.51	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	18.50	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.08	0.13	0.13	2.78	0.78	0.03	0.46	1,095.00	0.013	9.86E-03	(hexane)
Gasoline-Fired Generator < 250 HP (Maint. Welder)	0.06	0.06	0.06	0.05	0.99	1.35	0.62	97.32	2.43E-03	7.42E-04	(formaldehyde)
Gasoline-Fired Generator < 250 HP (Emergency Gen.)	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.02	0.03	0.01	2.17	5.42E-05	1.65E-05	(formaldehyde)
Diesel-Fired Generator < 600 HP (RAP Screener)	0.96	0.96	0.96	0.90	13.58	1.10	2.93	505.38	0.012	3.62E-03	(formaldehyde)
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	NA	
Worst Case Emissions*	186.36	79.16	88.42	95.90	48.22	18.11	67.40	41,414.27	10.11	8.82	(hydrogen chloride)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	0.54	0.54	0.54	0	0	8.35	1.40	0	0.14	0.04	(formaldehyde)
Material Storage Piles	3.74	1.31	1.31	0	0	0	0	0	0	0	
Material Processing and Handling	3.15	1.49	0.23	0	0	0	0	0	0	0	
Material Screening and Conveying	12.97	4.54	4.54	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	34.62	8.82	0.88	0	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	52.50	0	0	13.69	4.73	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0	
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	negl	
Total Fugitive Emissions	55.01	16.70	7.49	0	0	60.85	1.40	0	13.83	4.73	(xylenes)
Totals Limited/Controlled Emissions	241.37	95.86	95.92	95.90	48.22	78.96	68.80	41,414.27	23.94	8.82	(hydrogen chloride)

negl = negligible

NA = not applicable

Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion and Hot Oil Heating System + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP

Fuel component percentages provided by the source.

Appendix A.2: Limited Emissions Summary
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Fuel Limitations

Maximum Fuel Input Rate	=	75.0	MMBtu/hr
Natural Gas Limitation	=	657	MMCF/yr
No. 2 Fuel Oil Limitation	=	2,075.246	gal/yr, and 0.50 % sulfur
No. 4 Fuel Oil Limitation	=	1,964.567	gal/yr, and 0.50 % sulfur
Residual (No. 5 or No. 6) Fuel Oil Limitation	=	0	gal/yr, and 0 % sulfur
Propane Limitation	=	0	gal/yr, and 0 gr/100 ft3 sulfur
Butane Limitation	=	0	gal/yr, and 0 gr/100 ft3 sulfur
Used/Waste Oil Limitation	=	1,336.440	gal/yr, and 0.75 % sulfur, 0.947 % ash, 0.200 % chlorine, 0.0089 % lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)							Limited Potential to Emit (tons/yr)							Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	
PM	1.9	2.0	7.0	3.22	0.5	0.6	60.6	0.62	2.08	6.88	0.00	0.000	0.000	40.50	40.50
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	48.297	2.50	3.42	8.15	0.00	0.000	0.000	32.27	32.27
SO2	0.6	71.0	75.0	0.0	0.00	0.00	110.3	0.20	73.67	73.67	0.00	0.000	0.000	73.67	73.67
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	32.85	20.75	19.65	0.00	0.00	0.00	12.70	32.85
VOC	5.5	0.20	0.20	0.28	1.0	1.10	1.0	1.81	0.21	0.20	0.00	0.00	0.00	0.67	1.81
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	27.59	5.19	4.91	0.00	0.00	0.00	3.34	27.59
Hazardous Air Pollutant															
HCl							13.2							8.82	8.82
Antimony			5.25E-03	5.25E-03			negl			5.16E-03	0.00E+00			negl	5.2E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	6.6E-05	5.81E-04	1.30E-03	0.00E+00			7.35E-02	7.4E-02
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	3.9E-06	4.36E-04	2.73E-05	0.00E+00			negl	4.4E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	3.6E-04	4.36E-04	3.91E-04	0.00E+00			6.21E-03	6.2E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	4.6E-04	4.36E-04	8.30E-04	0.00E+00			1.34E-02	1.3E-02
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	2.8E-05		5.91E-03	0.00E+00			1.40E-04	5.9E-03
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.4895	1.6E-04	1.31E-03	1.48E-03	0.00E+00			3.3E-01	0.33
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.2E-04	8.72E-04	2.95E-03	0.00E+00			4.54E-02	0.05
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				8.5E-05	4.36E-04	1.11E-04	0.00E+00				4.4E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	6.9E-04	4.36E-04	8.30E-02	0.00E+00			7.35E-03	0.083
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	7.9E-06	2.18E-03	6.71E-04	0.00E+00			negl	2.2E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						2.32E-04	0.00E+00				2.3E-04
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				6.9E-04		2.10E-04	0.00E+00				6.9E-04
Bis(2-ethylhexyl)phthalate							2.2E-03							1.47E-03	1.5E-03
Dichlorobenzene	1.2E-03						8.0E-07	3.9E-04						5.35E-07	3.9E-04
Ethylbenzene			6.36E-05	6.36E-05						6.25E-05	0.00E+00				6.2E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				2.5E-02	6.33E-02	3.24E-02	0.00E+00				0.063
Hexane	1.8E+00							0.59							0.591
Phenol							2.4E-03							1.60E-03	1.6E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				1.1E-03		6.09E-03	0.00E+00				6.1E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		1.11E-03	0.00E+00			2.61E-02	2.6E-02
Polycyclic Organic Matter		3.30E-03							3.42E-03						3.4E-03
Xylene			1.09E-04	1.09E-04						1.07E-04	0.00E+00				1.1E-04
Total HAPs								0.62	0.07	0.14	0.00	0	0	9.32	10.08

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No.4, and No.6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (< 2.5 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Fuel Limitations

Maximum Fuel Input Rate =	75	MMBtu/hr						
Natural Gas Limitation =	657	MMCF/yr						
No. 2 Fuel Oil Limitation =	2,075,246	gal/yr, and	0.50	% sulfur				
No. 4 Fuel Oil Limitation =	1,964,567	gal/yr, and	0.50	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur				
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Used/Waste Oil Limitation =	1,336,440	gal/yr, and	0.75	% sulfur	0.947	% ash	0.200	% chlorine, 0.0089 % lead

Limited Emissions

CO ₂ e Fraction	Emission Factor (units)							Global Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO ₂	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15	Carbon dioxide	CO ₂	1
CH ₄	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH ₄	21
N ₂ O	2.20	0.26	0.19	0.53	0.90	0.90	0.18	Nitrous oxide	N ₂ O	310

CO ₂ e Fraction	Limited Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)
CO ₂	39,473.17	23,347.98	23,725.54	0.00	0.00	0.00	14,716.98
CH ₄	0.82	0.95	0.95	0.00	0.00	0.00	0.60
N ₂ O	0.72	0.27	0.19	0.00	0.00	0.00	0.12
Total	39,474.71	23,348.20	23,726.68	0.00	0.00	0.00	14,717.69
CO ₂ e Equivalent Emissions (tons/yr)	39,714.40	23,451.51	23,804.27	0.00	0.00	0.00	14,766.79

CO₂e for Worst Case Fuel* (tons/yr)
39,714.40

Methodology

Fuel Limitations from TSD Appendix A.2, page 1 of 15.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

- Natural Gas: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2
- No. 2, No. 4, and Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-3
- Propane and Butane: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1
- Waste Oil: Emission Factors for CO₂, CH₄, and N₂O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)

All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)

Limited CO₂e Emissions (tons/yr) = CO₂ Potential Emission of "worst case" fuel (ton/yr) x CO₂ GWP (1) + CH₄ Potential Emission of "worst case" fuel (ton/yr) x CH₄ GWP (21) + N₂O Potential Emission of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CH₄ = Methane

CO₂ = Carbon Dioxide

N₂O = Nitrogen Dioxide

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Dryer/Mixer - Process Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	225	ton/hr
Annual Asphalt Production Limitation =	975,000	ton/yr
PM Dryer/Mixer Limitation =	0.380	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.160	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.179	lb/ton of asphalt production
SO2 Dryer/Mixer Limitation =	0.058	lb/ton of asphalt production
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.380	0.380	0.380	185.3	185.3	185.3	185.3
PM10*	0.160	0.160	0.160	78.0	78.0	78.0	78.0
PM2.5*	0.179	0.179	0.179	87.3	87.3	87.3	87.3
SO2**	0.003	0.011	0.058	1.7	5.4	28.3	28.3
NOx**	0.026	0.055	0.055	12.7	26.8	26.8	26.8
VOC**	0.032	0.032	0.032	15.6	15.6	15.6	15.6
CO***	0.130	0.130	0.130	63.4	63.4	63.4	63.4
Hazardous Air Pollutant							
HCl			2.10E-04			0.10	0.10
Antimony	1.80E-07	1.80E-07	1.80E-07	8.78E-05	8.78E-05	8.78E-05	8.78E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	2.73E-04	2.73E-04	2.73E-04	2.73E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	2.00E-04	2.00E-04	2.00E-04	2.00E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	2.68E-03	2.68E-03	2.68E-03	2.68E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.27E-05	1.27E-05	1.27E-05	1.27E-05
Lead	6.20E-07	1.50E-05	1.50E-05	3.02E-04	7.31E-03	7.31E-03	7.31E-03
Manganese	7.70E-06	7.70E-06	7.70E-06	3.75E-03	3.75E-03	3.75E-03	3.75E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.17E-04	1.27E-03	1.27E-03	1.27E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	3.07E-02	3.07E-02	3.07E-02	3.07E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	1.71E-04	1.71E-04	1.71E-04	1.71E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	1.95E-02	1.95E-02	1.95E-02	0.02
Acetaldehyde			1.30E-03			0.63	0.63
Acrolein			2.60E-05			1.27E-02	1.27E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.19	0.19	0.19	0.19
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.12	0.12	0.12	0.12
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	1.51	1.51	1.51	1.51
Hexane	9.20E-04	9.20E-04	9.20E-04	0.45	0.45	0.45	0.45
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.02	0.02	0.02	0.02
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.06	0.06
Quinone			1.60E-04			0.08	0.08
Toluene	1.50E-04	2.90E-03	2.90E-03	0.07	1.41	1.41	1.41
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.09	0.43	0.43	0.43
Xylene	2.00E-04	2.00E-04	2.00E-04	0.10	0.10	0.10	0.10
Total HAPs							5.20
Worst Single HAP							1.51125 (formaldehyde)

Methodology

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

Abbreviations

PM = Particulate Matter SO2 = Sulfur Dioxide CO = Carbon Monoxide PAH = Polyaromatic Hydrocarbon
 PM10 = Particulate Matter (<10 um) NOx = Nitrous Oxides HAP = Hazardous Air Pollutant
 PM2.5 = Particulate Matter (< 2.5 um) VOC = Volatile Organic Compounds HCl = Hydrogen Chloride

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production = ton/hr
 Annual Asphalt Production Limitation = ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO ₂ e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO ₂	33	33	33	1	16,087.50	16,087.50	16,087.50	16,210.35
CH ₄	0.0120	0.0120	0.0120	21	5.85	5.85	5.85	
N ₂ O				310	0	0	0	
Total					16,093.35	16,093.35	16,093.35	
CO ₂ e Equivalent Emissions (tons/yr)					16,210.35	16,210.35	16,210.35	

Methodology

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N₂O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N₂O emission anticipated from this process.

Limited/Controlled Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

Limited CO₂e Emissions (tons/yr) = CO₂ Potential Emission of "worst case" fuel (ton/yr) x CO₂ GWP (1) + CH₄ Potential Emission of "worst case" fuel (ton/yr) x CH₄ GWP (21) + N₂O Potential Emission of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CO₂ = Carbon Dioxide

CH₄ = Methane

N₂O = Nitrogen Dioxide

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Dryer/Mixer Slag Processing**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions from the processing of slag in the aggregate drying/mixing

Limited Blast Furnace Slag Usage =

50,000

 ton/yr

1.50

 % sulfur
 Limited Annual Steel Slag Usage =

975,000

 ton/yr

0.66

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.7400	18.50
Steel Slag**	0.0014	0.68

Methodology

* Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Limited Potential to Emit SO2 from Slag (tons/yr) = [(Limited Slag Usage (ton/yr)) * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations

SO2 = Sulfur Dioxide

Appendix A.2: Limited Emissions Summary
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
Hot Oil Heater

Company Name: Babcock Paving, Inc.
Source Location: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the fuel combustion emissions from the hot oil heater are minimal, the limited emissions are equal to the unlimited emissions.

Maximum Hot Oil Heater Fuel Input Rate = 1.25 MMBtu/hr
 Natural Gas Usage = 11 MMCF/yr
 No. 2 Fuel Oil Usage = 78,214 gal/yr, and 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.010	0.078	0.08
PM10/PM2.5	7.6	3.3	0.042	0.129	0.13
SO2	0.6	71.0	0.003	2.777	2.78
NOx	100	20.0	0.548	0.782	0.78
VOC	5.5	0.20	0.030	0.008	0.03
CO	84	5.0	0.460	0.196	0.46
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.1E-06	2.19E-05	2.2E-05
Beryllium	1.2E-05	4.2E-04	6.6E-08	1.64E-05	1.6E-05
Cadmium	1.1E-03	4.2E-04	6.0E-06	1.64E-05	1.6E-05
Chromium	1.4E-03	4.2E-04	7.7E-06	1.64E-05	1.6E-05
Cobalt	8.4E-05		4.6E-07		4.6E-07
Lead	5.0E-04	1.3E-03	2.7E-06	4.93E-05	4.9E-05
Manganese	3.8E-04	8.4E-04	2.1E-06	3.29E-05	3.3E-05
Mercury	2.6E-04	4.2E-04	1.4E-06	1.64E-05	1.6E-05
Nickel	2.1E-03	4.2E-04	1.1E-05	1.64E-05	1.6E-05
Selenium	2.4E-05	2.1E-03	1.3E-07	8.21E-05	8.2E-05
Benzene	2.1E-03		1.1E-05		1.1E-05
Dichlorobenzene	1.2E-03		6.6E-06		6.6E-06
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	4.1E-04	2.39E-03	0.002
Hexane	1.8E+00		0.01		0.010
Phenol					0
Toluene	3.4E-03		1.9E-05		1.9E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		1.29E-04	1.3E-04
		Total HAPs =	1.0E-02	2.8E-03	0.013
		Worst Single HAP =	9.9E-03	2.4E-03	9.9E-03
			(Hexane)	(Formaldehyde)	(Hexane)

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4

No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

SO2 = Sulfur Dioxide

NOx = Nitrous Oxides

VOC = Volatile Organic Compounds

CO = Carbon Monoxide

HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride

PAH = Polyaromatic Hydrocarbon

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 1.25 MMBtu/hr
 Natural Gas Usage = 11 MMCF/yr
 No. 2 Fuel Oil Usage = 78,214 gal/yr, 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)
CO ₂	120,161.84	22,501.41	1	657.89	879.97
CH ₄	2.49	0.91	21	0.014	3.57E-02
N ₂ O	2.20	0.26	310	0.012	1.02E-02
Total				657.91	880.01

Worse Case CO₂e Emissions (tons/yr)
883.87

CO ₂ e Equivalent Emissions (tons/yr)	661.91	883.87
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Methodology

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas : Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2 Fuel Oil: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CH₄ = Methane
 CO₂ = Carbon Dioxide

N₂O = Nitrogen Dioxide
 PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Hot Oil Heating System - Process Emissions**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the process emissions from the hot oil heating system are minimal, the limited emissions are equal to the unlimited emissions.

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater = 1.25 MMBtu/hr
 Natural Gas Usage = 11 MMCF/yr, and
 No. 2 Fuel Oil Usage = 78,214 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	1.42E-04	1.04E-03	1.04E-03
CO	8.90E-06	0.0012	0.049	0.047	0.049
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1,095.00	1,095.00	1,095.00
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	1.42E-04	1.37E-04	1.42E-04
Acenaphthene		5.30E-07		2.07E-05	2.07E-05
Acenaphthylene		2.00E-07		7.82E-06	7.82E-06
Anthracene		1.80E-07		7.04E-06	7.04E-06
Benzo(b)fluoranthene		1.00E-07		3.91E-06	3.91E-06
Fluoranthene		4.40E-08		1.72E-06	1.72E-06
Fluorene		3.20E-08		1.25E-06	1.25E-06
Naphthalene		1.70E-05		6.65E-04	6.65E-04
Phenanthrene		4.90E-06		1.92E-04	1.92E-04
Pyrene		3.20E-08		1.25E-06	1.25E-06
			Total HAPs	1.04E-03	
			Worst Single HAP	6.65E-04	(Naphthalene)

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr)) * (Emission Factor (lb/CF)) * (1000000 CF/MMCF) * (ton/2000 lbs)

No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr)) * (Emission Factor (lb/gal)) * (ton/2000 lbs)

Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N2O available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations

CO = Carbon Monoxide

VOC = Volatile Organic Compound

CO2 = Carbon Dioxide

**Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines
Gasoline-Fired Maintenance Welding Unit
Output Rating (<=250 HP)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the fuel combustion emissions from this unit are minimal, the limited emissions are equal to the unlimited emissions.

Output Horsepower Rating (hp)	20.5
Limited Hours Operated per Year	8760
Limited Throughput (hp-hr/yr)	179,580
Limited Gasoline Usage (gal/yr)	10,036

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO ₂	NO _x	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal ¹	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Limited Emission in tons/yr	0.06	0.06	0.06	0.05	0.99	1.35	0.62

¹ The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

² PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Limited Emission in tons/yr	5.86E-04	2.57E-04	1.79E-04	2.46E-05	7.42E-04	4.82E-04	5.81E-05	1.06E-04

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	2.43E-03
Limited Emission of Worst Case HAPs (tons/yr)	7.42E-04

Green House Gas Emissions (GHG)

	Pollutant		
	CO ₂ ⁵	CH ₄ ⁶	N ₂ O ⁶
Emission Factor in lb/hp-hr	1.08	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	19,324.44	0.83	0.17
Limited Emission in tons/yr	96.97	4.16E-03	8.31E-04

⁵ The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

⁶ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Summed Limited Emissions in tons/yr	96.98
CO₂e Total in tons/yr	97.32

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Gasoline Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/20,300 (lb/Btu) * 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH₄ and N₂O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO₂e (tons/yr) = CO₂ Potential Emission ton/yr x CO₂ GWP (1) + CH₄ Potential Emission ton/yr x CH₄ GWP (21) + N₂O Potential Emission ton/yr x N₂O GWP (310).

**Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines
Gasoline-Fired Emergency Generator
Output Rating (<=250 HP)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the fuel combustion emissions from this unit are minimal, the limited emissions are equal to the unlimited emissions.

Output Horsepower Rating (hp)	8.0
Limited Hours Operated per Year	500
Limited Throughput (hp-hr/yr)	4,000
Limited Gasoline Usage (gal/yr)	224

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO ₂	NO _x	VOC	CO
Emission Factor in lb/hp-hr	7.21E-04	7.21E-04	7.21E-04	5.91E-04	0.011	0.015	6.96E-03
Emission Factor in lb/kgal ¹	12.90	12.90	12.90	10.57	196.82	268.40	124.54
Limited Emission in tons/yr	1.44E-03	1.44E-03	1.44E-03	1.18E-03	0.02	0.03	0.01

¹ The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

² PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.17E-01	5.12E-02	3.57E-02	4.90E-03	1.48E-01	9.61E-02	1.16E-02	2.10E-02
Limited Emission in tons/yr	1.31E-05	5.73E-06	3.99E-06	5.47E-07	1.65E-05	1.07E-05	1.30E-06	2.35E-06

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	5.42E-05
Limited Emission of Worst Case HAPs (tons/yr)	1.65E-05

Green House Gas Emissions (GHG)

	Pollutant		
	CO ₂ ⁵	CH ₄ ⁶	N ₂ O ⁶
Emission Factor in lb/hp-hr	1.08	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	19,324.44	0.83	0.17
Limited Emission in tons/yr	2.16	9.26E-05	1.85E-05

⁵ The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

⁶ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using a gasoline higher heating value (HHV) of 20,300 Btu / lb (AP-42 Table 3.3-1), and gasoline density of 6.17 lb / gal (AP 42 Appendix A: Miscellaneous Data and Conversion Factors, page A-7, the Densities of Selected Substances Table) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 20,300 (Btu/lb) * 6.17 (lb/gal) * 1,000 (gal/kgal)

Summed Limited Emissions in tons/yr	2.16
CO ₂ e Total in tons/yr	2.17

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Gasoline Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/20,300 (lb/Btu) * 1/6.17 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH₄ and N₂O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Gasoline Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO₂e (tons/yr) = CO₂ Potential Emission ton/yr x CO₂ GWP (1) + CH₄ Potential Emission ton/yr x CH₄ GWP (21) + N₂O Potential Emission ton/yr x N₂O GWP (310).

**Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines
Diesel Fuel-Fired RAP Screening Unit
Output Rating (<=600 HP)**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Number: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the fuel combustion emissions from this unit are minimal, the limited emissions are equal to the unlimited emissions.

Output Horsepower Rating (hp)	100.0
Limited Hours Operated per Year	8760
Limited Throughput (hp-hr/yr)	876,000
Limited Diesel Fuel Usage (gal/yr)	44,749

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	0.96	0.96	0.96	0.90	13.58	1.10	2.93

¹The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

²PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Limited Emission in tons/yr	2.86E-03	1.25E-03	8.74E-04	1.20E-04	3.62E-03	2.35E-03	2.84E-04	5.15E-04

³PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	1.19E-02
Limited Emission of Worst Case HAPs (tons/yr)	3.62E-03

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ⁶	N2O ⁶
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Limited Emission in tons/yr	503.70	0.020	0.004

⁵The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Limited Emissions in tons/yr	503.72
CO2e Total in tons/yr	505.38

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines
Large Diesel Fuel-Fired Unit(s)
Output Rating (>600 HP)

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Number: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0	Sulfur Content (S) of Fuel (% by weight)	0.00
Limited Hours Operated per Year	0		
Limited Throughput (hp-hr/yr)	0		
Limited Diesel Fuel Usage (gal/yr)	0		

	Pollutant						
	PM	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00809S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal ¹	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹ The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

² Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

² Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs ³
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal ⁴	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	0.00E+00
Limited Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ^{5,6}	N2O ⁷
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Limited Emission in tons/yr	0.00	0.00	0.00

⁵ The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶ According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

⁷ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁷ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A.2: Limited Emissions Summary Asphalt Load-Out, Silo Filling, and Yard Emissions

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.50	
Annual Asphalt Production Limitation =	975,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.25	0.29	NA	0.54
Organic PM	3.4E-04	2.5E-04	NA	0.17	0.124	NA	0.29
TOC	0.004	0.012	0.001	2.03	5.94	0.536	8.5
CO	0.001	0.001	3.5E-04	0.66	0.575	0.172	1.40

NA = Not Applicable (no AP-42 Emission Factor)

PM/HAPs	0.012	0.014	0	0.026
VOC/HAPs	0.030	0.076	0.008	0.113
non-VOC/HAPs	1.6E-04	1.6E-05	4.1E-05	2.1E-04
non-VOC/non-HAPs	0.15	0.08	0.04	0.27

Total VOCs	1.91	5.94	0.5	8.4
Total HAPs	0.04	0.09	0.008	0.14
	Worst Single HAP			0.043
				(formaldehyde)

Methodology

The asphalt temperature and volatility factor were provided by the source.

Limited Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::

$$\text{Total PM/PM10 Ef} = 0.000181 + 0.00141(-V)e^{(0.0251)(T+460)-20.43}$$

$$\text{Organic PM Ef} = 0.00141(-V)e^{(0.0251)(T+460)-20.43}$$

$$\text{TOC Ef} = 0.0172(-V)e^{(0.0251)(T+460)-20.43}$$

$$\text{CO Ef} = 0.00558(-V)e^{(0.0251)(T+460)-20.43}$$

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):

$$\text{PM/PM10 Ef} = 0.000332 + 0.00105(-V)e^{(0.0251)(T+460)-20.43}$$

$$\text{Organic PM Ef} = 0.00105(-V)e^{(0.0251)(T+460)-20.43}$$

$$\text{TOC Ef} = 0.0504(-V)e^{(0.0251)(T+460)-20.43}$$

$$\text{CO Ef} = 0.00488(-V)e^{(0.0251)(T+460)-20.43}$$

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	4.3E-04	5.8E-04	NA	1.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	4.7E-05	1.7E-05	NA	6.4E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.2E-04	1.6E-04	NA	2.8E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	3.2E-05	6.9E-05	NA	1.0E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.3E-05	0	NA	1.3E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	3.7E-06	0	NA	3.7E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	3.2E-06	0	NA	3.2E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	3.8E-06	0	NA	3.8E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	1.3E-05	1.2E-05	NA	2.5E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	1.7E-04	2.6E-04	NA	4.3E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	6.1E-07	0	NA	6.1E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	8.3E-05	1.9E-04	NA	2.7E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.3E-03	1.3E-03	NA	2.5E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	7.8E-07	0	NA	7.8E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	4.0E-03	6.5E-03	NA	0.010
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	2.1E-03	2.3E-03	NA	4.3E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	3.7E-05	3.7E-05	NA	7.4E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	1.3E-03	2.2E-03	NA	3.6E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	2.5E-04	5.4E-04	NA	7.9E-04
Total PAH HAPs							0.010	0.014	NA	0.024
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	2.0E-03	0	0	2.0E-03

NA = Not Applicable (no AP-42 Emission Factor)

Methodology

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]
Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

PM = Particulate Matter
HAP = Hazardous Air Pollutant
POM = Polycyclic Organic Matter

Appendix A.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	1.91	5.94	0.50	8.35
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	1.3E-01	1.5E-02	3.5E-02	0.182
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	9.3E-04	3.3E-03	2.5E-04	0.004
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	1.4E-02	6.5E-02	3.8E-03	0.084
Total non-VOC/non-HAPS					7.30%	1.40%	0.148	0.083	0.039	0.27
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.1E-03	1.9E-03	2.8E-04	3.2E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	1.9E-04	2.9E-04	5.1E-05	5.4E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	9.9E-04	2.3E-03	2.6E-04	3.6E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	2.6E-04	9.5E-04	7.0E-05	1.3E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	4.3E-06	2.4E-04	1.1E-06	2.4E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	3.0E-04	1.4E-03	8.0E-05	1.8E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	2.2E-03	0	5.9E-04	2.8E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	5.7E-03	2.3E-03	1.5E-03	0.009
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	1.8E-03	4.1E-02	4.7E-04	0.043
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	3.0E-03	5.9E-03	8.0E-04	0.010
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	3.6E-05	1.6E-05	9.7E-06	6.5E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	1.6E-05	0	1.6E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	1.5E-04	3.2E-04	3.9E-05	5.1E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	1.6E-04	0	4.1E-05	2.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	4.3E-03	3.7E-03	1.1E-03	0.009
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	2.6E-05	0	7.0E-06	3.3E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	8.3E-03	1.2E-02	2.2E-03	0.022
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	1.6E-03	3.4E-03	4.3E-04	5.4E-03
Total volatile organic HAPs					1.50%	1.30%	0.030	0.077	0.008	0.116

Methodology

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

AbbreviationsTOC = Total Organic Compounds
HAP = Hazardous Air PollutantVOC = Volatile Organic Compound
MTBE = Methyl tert butyl ether

Appendix A.2: Limited Emissions Summary Material Storage Piles

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the emissions from the storage piles are minimal, the limited emissions are equal to the unlimited emissions.

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

where E_f = emission factor (lb/acre/day)
 s = silt content (wt %)
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.75	0.412	0.144
Limestone	1.6	1.85	3.75	1.267	0.444
RAP	0.5	0.58	1.25	0.132	0.046
Gravel	1.6	1.85	0.75	0.253	0.089
Slag	3.8	4.40	2.00	1.605	0.562
Shingles	0.5	0.58	0.62	0.065	0.023
Totals				3.74	1.31

Methodology

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum anticipated pile size (acres) provided by the source. The pile size of the slag and shingles were provided in tons and have been converted to acres based on the assumption the the piles are at maximum 8.5 feet in height.

PM2.5 = PM10

Abbreviations

RAP = recycled asphalt pavement
 PM = Particulate Matter

PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Material Processing, Handling, Crushing, Screening, and Conveying**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^k \cdot [(U/5)^{1.3} / (M/2)^{1.4}]$$

where: E_f = Emission factor (lb/ton)

k (PM) = 0.74 = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
 k (PM10) = 0.35 = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
 k (PM2.5) = 0.053 = particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
 U = 10.2 = worst case annual mean wind speed (Source: NOAA, 2006*)
 M = 4.0 = material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)

E_f (PM) = 2.27E-03 lb PM/ton of material handled
 E_f (PM10) = 1.07E-03 lb PM10/ton of material handled
 E_f (PM2.5) = 1.62E-04 lb PM2.5/ton of material handled

Annual Asphalt Production Limitation = 975,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 926,250 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	1.05	0.50	0.08
Front-end loader dumping of materials into feeder bins	1.05	0.50	0.08
Conveyor dropping material into dryer/mixer or batch tower	1.05	0.50	0.08
Total (tons/yr)	3.15	1.49	0.23

Methodology

The percent asphalt cement/binder provided by the source.
 Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Limited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives
 *Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 19.2.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 19.2.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	0.00	0.00
Screening	0.025	0.0087	11.58	4.03
Conveying	0.003	0.0011	1.39	0.51
Limited Potential to Emit (tons/yr) =			12.97	4.54

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Unpaved Roads**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Annual Asphalt Production Limitation =	975,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	926,250	tons/yr
Maximum Asphalt Cement/Binder Throughput =	48,750	tons/yr
No. 2 Fuel Oil Limitation =	2,075,246	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	4.1E+04	1.6E+06	300	0.057	2349.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	4.1E+04	7.0E+05	300	0.057	2349.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	1.4E+03	6.5E+04	300	0.057	76.9
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.4E+03	1.6E+04	300	0.057	76.9
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.2E+02	9.6E+03	300	0.057	12.5
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.2E+02	2.6E+03	300	0.057	12.5
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	2.2E+05	4.2E+06	300	0.057	12530.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	2.2E+05	3.3E+06	300	0.057	12530.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	4.1E+04	1.7E+06	300	0.057	2308.2
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	4.1E+04	6.9E+05	300	0.057	2308.2
Total					6.1E+05	1.2E+07			3.5E+04

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef = $k[(s/12)^a][W/3]^b$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = $E * [(365 - P)/365]$

Mitigated Emission Factor, Eext = $E * [(365 - P)/365]$
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, Eext =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	7.16	1.82	0.18	4.71	1.20	0.12	2.35	0.60	0.06
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	7.16	1.82	0.18	4.71	1.20	0.12	2.35	0.60	0.06
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.234	0.060	0.01	0.154	0.039	3.9E-03	0.077	0.020	2.0E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.234	0.060	0.01	0.154	0.039	3.9E-03	0.077	0.020	2.0E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.038	0.010	9.7E-04	0.025	0.006	6.4E-04	0.012	0.003	3.2E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.038	0.010	9.7E-04	0.025	0.006	6.4E-04	0.012	0.003	3.2E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	38.19	9.73	0.97	25.11	6.40	0.64	12.55	3.20	0.32
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	38.19	9.73	0.97	25.11	6.40	0.64	12.55	3.20	0.32
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	7.03	1.79	0.18	4.63	1.18	0.12	2.31	0.59	0.06
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	7.03	1.79	0.18	4.63	1.18	0.12	2.31	0.59	0.06
Totals		105.30	26.84	2.68	69.24	17.65	1.76	34.62	8.82	0.88

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Paved Roads**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Annual Asphalt Production Limitation	=	975,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	=	5.0%	
Maximum Material Handling Throughput	=	926,250	tons/yr
Maximum Asphalt Cement/Binder Throughput	=	48,750	tons/yr
No. 2 Fuel Oil Limitation	=	2,075,246	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	4.1E+04	1.6E+06	300	0.057	2349.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	4.1E+04	7.0E+05	300	0.057	2349.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	1.4E+03	6.5E+04	300	0.057	76.9
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.4E+03	1.6E+04	300	0.057	76.9
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.2E+02	9.6E+03	300	0.057	12.5
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.2E+02	2.6E+03	300	0.057	12.5
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	2.2E+05	4.2E+06	300	0.057	12530.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	2.2E+05	3.3E+06	300	0.057	12530.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	4.1E+04	1.7E+06	300	0.057	2308.2
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	4.1E+04	6.9E+05	300	0.057	2308.2
Total					6.1E+05	1.2E+07			3.5E+04

Average Vehicle Weight Per Trip = 20.3 tons/trip
 Average Miles Per Trip = 0.057 miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$
 where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, E_{ext}	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.17	0.03	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.17	0.03	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.006	0.001	2.8E-04	0.005	0.001	2.6E-04	0.003	5.2E-04	1.3E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.006	0.001	2.8E-04	0.005	0.001	2.6E-04	0.003	5.2E-04	1.3E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	9.3E-04	1.9E-04	4.5E-05	8.5E-04	1.7E-04	4.2E-05	4.2E-04	8.5E-05	2.1E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	9.3E-04	1.9E-04	4.5E-05	8.5E-04	1.7E-04	4.2E-05	4.2E-04	8.5E-05	2.1E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.93	0.19	0.05	0.85	0.17	0.04	0.43	0.09	0.02
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.93	0.19	0.05	0.85	0.17	0.04	0.43	0.09	0.02
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.17	0.03	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.17	0.03	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Totals		2.57	0.51	0.13	2.35	0.47	0.12	1.17	0.23	0.06

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary Cold Mix Asphalt Production and Stockpiles

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Limited VOC Emissions from the Sum of the Liquid Binders = 52.50 tons/yr

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder	Weight % VOC solvent in binder that evaporates	VOC Solvent Usage Limitation (tons/yr)	Limited PTE of VOC (tons/yr)	Liquid Binder Adjustment Ratio
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	55.26	52.50	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	75.00	52.50	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	210.00	52.50	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	113.15	52.50	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,100.00	52.50	40.0
Worst Case Limited PTE of VOC =				52.50	

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
Limited PTE of Total HAPs (tons/yr) =	13.69
Limited PTE of Single HAP (tons/yr) =	4.73 Xylenes

Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
Total Organic HAPs		26.08%	0.33%	1.29%	0.68%	0.19%
Worst Single HAP		9.00% Xylenes	0.31% Naphthalene	0.50% Xylenes	0.23% Xylenes	0.07% Chrysene

Methodology

Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]

Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Gasoline Fuel Transfer and Dispensing Operation**

Company Name: Babcock Paving, Inc.
Source Address: 6049 Work Street, Demotte, Indiana 46310
Permit Renewal #: F073-32549-00041
Reviewer: Hannah L. Desrosiers

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= 0 \text{ gallons/day} \\ &= 0.0 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
Total		0.00

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00
Limited PTE of Single HAP (tons/yr) =	0.00 Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Rodney Urbano
Babcock Paving, Inc.
6049 Work Street
DeMotte, IN 46310

DATE: April 8, 2013

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
FESOP Renewal
073-32549-00041

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
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Toll Free (800) 451-6027
www.idem.IN.gov

April 8, 2013

TO: Demotte Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Babcock Paving, Inc.
Permit Number: 073-32549-00041

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	GHOTOPP 4/8/2013 Babcock Paving, Inc 073-32549-00041 Final		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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1		Rodney Urbano Babcock Paving, Inc 6049 Work St DeMotte IN 46310-8821 (Source CAATS) via confirmed delivery										
2		Jasper County Commissioners 115 W. Washington Street Rensselaer IN 47978 (Local Official)										
3		Jasper County Health Department 105 W. Kellner St Rensselaer IN 47978-2623 (Health Department)										
4		Mr. Kenny Haun P.O. Box 280 Rensselaer IN 47978 (Affected Party)										
5		Demotte Public Library 901 Birch Street SW Demotte IN 46310 (Library)										
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4			