INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
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: September 7, 2012

RE: Paul H. Rohe Company, Inc. / 031-31702-03258

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
OFFICE OF AIR QUALITY

Paul H. Rohe Company, Inc.
Portable

(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.: F031-31702-03258	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: September 7, 2012 Expiration Date: September 7, 2022

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)(I)]
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 Overall Source Limit [326 IAC 2-8]
C.2 Opacity [326 IAC 5-1]
C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]
C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
C.5 Fugitive Dust Emissions [326 IAC 6-4]
C.6 Fugitive Particulate Matter Emissions [326 IAC 6.8-10-3]
C.7 Lake County Particulate Matter Contingency Measures [326 IAC 6.8-11-1]
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 Continuous Compliance Plan [326 IAC 6.8-8-1] [326 IAC 6.8-8-8]
C.13 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.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]
C.16 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]
C.17 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.18 Emission Statement [326 IAC 2-6] [326 IAC 2-8-4(3)]
C.19 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]
C.20 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

Portable Source Requirement
C.21 Relocation of Portable Sources [326 IAC 2-14-4]

Stratospheric Ozone Protection
C.22 Compliance with 40 CFR 82 and 326 IAC 22-1

D.1. EMISSIONS UNIT OPERATION CONDITIONS - HMA Plant & HOH 27

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 Limits: PM10, PM2.5, SO2, NOx, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2] [326 IAC 2-3][326 IAC 2-1.1-5][326 IAC 8-1-6]
D.1.3 FESOP Limits: SO2, NOx, GHGs as CO2e, and HAPs [326 IAC 2-8-4][326 IAC 2-2] [326 IAC 2-3][326 IAC 2-4.1]
D.1.4 Particulate Emission Limits [326 IAC 6-2]
D.1.5 Particulate Emission Limits [326 IAC 6.5-1-2][326 IAC 6.8-1-2]
D.1.6 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1] [326 IAC 7-2-1]
D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements
D.1.8 Particulate Control (PM/PM10/PM2.5)
D.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]
D.1.10 Sulfur Dioxide (SO2) Emissions and Sulfur Content
D.1.11 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content
D.1.12 Multiple Fuel and Slag Usage Limitations
D.1.13 Shingle Asbestos Content

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]
D.1.14 Visible Emissions Notations
D.1.15 Parametric Monitoring
D.1.16 Broken or Failed Bag Detection
D.1.17 Cyclone Failure Detection

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]
D.1.18 Record Keeping Requirements
D.1.19 Reporting Requirements

D.2. EMISSIONS UNIT OPERATION CONDITIONS: CMA Production & Storage 39

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][326 IAC 2-4.1]

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]
D.2.3 Record Keeping Requirements
D.2.4 Reporting Requirements

D.3. EMISSIONS UNIT OPERATION CONDITIONS - Storage Vessels (Tanks)..... 42

Emission Limitations and Standards [326 IAC 2-8-4(1)]
D.3.1 Volatile Organic Liquid Storage Vessels [326 IAC 8-9]

E.1. NSPS REQUIREMENTS - Hot-Mix Asphalt (HMA) Plant..... 43

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 NSPS Subpart I Requirements - Standards of Performance 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]

Certification Form 45
Emergency Occurrence Form 46
FESOP Quarterly Report Forms 48
Quarterly Deviation and Compliance Monitoring Report Form 52
Fugitive Dust Control Plan ..... Attachment A
NSPS Subpart I - Standards of Performance for Hot-mix Asphalt Facilities ..... Attachment B

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 portable 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. No crushing of RAP or grinding of shingles occurs at this source.

Initial Source Address:	992 South County Road 800 East, Greensburg, Indiana 47240
General Source Phone Number:	(513) 771-0820
SIC Code:	2951 (Asphalt Paing Mixtures and Blocks)
County Location:	Decatur
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 portable 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 1998, with a maximum throughput capacity of 325 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) 47.25 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 distillate fuel oil, and waste oil, as available, and equipped with one (1) cyclone collector and one (1) baghouse in series for particulate control, exhausting through one (1) stack, identified as stack SV-1. No crushing of RAP or grinding of shingles occurs at this source.

(b) Material feeding, conveying, and loading operations consisting of the following:

(1) Raw material storage piles, including:

(A) Sand storage piles, with a maximum anticipated pile size of 0.5 acre;

(B) Limestone storage piles, with a maximum anticipated pile size of 1.0 acre;

(C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.0 acre;

(D) Gravel storage piles, with a maximum anticipated pile size of 0.5 acre;

(F) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 0.05 acre; and

(E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 0.05 acre.

(2) Two (2) vibratory screens;

(3) Six (6) hoppers, including:

(A) Four (4) cold feed bins for coarse to fine aggregate; and

(B) Two (2) feed bins for recycled asphalt pavement and recycled shingles.

(4) Four (4) conveyors, including:

(A) Three (3) conveyors for transporting coarse to fine aggregates, recycled asphalt pavement, and recycled shingles to the rotary dryer;

(B) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silo.

(6) Two (2) hot-mixed asphalt storage silo;

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt operation is considered an affected facility.

(c) 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 portable source also includes the following insignificant activities:

(a) One (1) 1.16 million British thermal units per hour (MMBtu/hr) hot oil heater, identified as EU-02, constructed in 1998, firing No. 2 fuel oil, uncontrolled and exhausting to stack SV-2; [326 IAC 6-2, 326 IAC 6.5, 326 IAC 6.8]

(b) Three (3) storage tanks, exhausting at stacks SV-3, SV-4, and SV-5, including:

(1) One (1) liquid asphalt cement storage tank, identified as EU-03, constructed in 1998, with a maximum storage capacity of 30,000 gallons; [326 IAC 8 9]

(2) One (1) waste oil storage tank, identified as EU-04, constructed in 1998, with a maximum storage capacity of 30,000 gallons; [326 IAC 8 9] and

(3) One (1) No. 2 fuel oil storage tank, identified as EU-05, constructed in 1998, with a maximum storage capacity of 10,000 gallons. [326 IAC 8 9]

(c) 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;

(d) Combustion source flame safety purging on startup;

(e) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;

(f) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(g) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;

(h) 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;

(i) Closed loop heating and cooling systems;

(j) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(k) Paved and unpaved roads and parking lots with public access. [326 IAC 2-8, 326 IAC 6-4, 326 IAC 6-5, 326 IAC 6.8-10]

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

This portable 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, F031-31702-03258, 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 April 15 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, or Southeast Regional Office, and Southwest Regional Office 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
Southeast Regional Office phone: (812) 358-2027; fax: (812) 358-2058.
Southwest Regional Office phone: (812) 380 2305; fax: (812) 380 2304.

(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 F031-31702-03258 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 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 volatile organic compounds (VOCs) from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period;

(2) The potential to emit any regulated pollutant, except particulate matter (PM), volatile organic compounds (VOCs), and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-3 (Emission Offset) not applicable;

(3) 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

(4) 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.

(5) 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 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.2 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, when the source is located in any County except Lake, or the areas specified in C.2(b)(1) through (7).

(b) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in the following areas listed in 326 IAC 5-1-1(c):

(1) Clark County (Jefferson Township - Cities of Jeffersonville, Clarksville, and Oak Park);

(2) Dearborn County (Lawrenceburg Township - Cities of Lawrenceburg and Greendale);

(3) Dubois County (Bainbridge Township - the City of Jasper);

(4) Marion County (except the area of Washington Township east of Fall Creek and the area of Franklin Township south of Thompson Road and east of Five Points Road);

(5) St. Joseph County (the area north of Kern Road and east of Pine Road);

(6) Vanderburgh County (the area included in the City of Evansville and Pigeon Township); and

(7) Vigo County (Indiana State University campus, 0.5 km radius around UTM Easting 464,519.00, Northing 4,369,208.00, Zone 16.

(c) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in Lake County.

(d) 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, when the source is located in any County.

C.3 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.4 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.5 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.6 Fugitive Particulate Matter Emissions [326 IAC 6.8-10-3]

Pursuant to 326 IAC 6.8-10-3 (formerly 326 IAC 6-1-11.1) (Lake County Fugitive Particulate Matter Control Requirements), the particulate matter emissions from source wide activities shall meet the following requirements whenever the source is operating in Lake County:

(a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).

(b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).

(c) The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

(d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.

(e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.

(f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.

(g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).

(h) Material processing facilities shall include the following:

(1) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.

(2) The PM10 emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(3) The PM10 stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(4) The opacity of fugitive particulate emissions from the material processing facilities, except a crusher at which a capture system is not used, shall not exceed ten percent (10%) opacity.

(5) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).

Note: Material processing facilities include crushers, screens, grinders, mixers, dryers, belt conveyors, bucket elevators, bagging operations, storage bins, and truck or railroad car loading stations.

(i) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).

(j) Material transfer limits shall be as follows:

(1) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

(2) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average.

(k) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to Fugitive Dust Control Plan, which is included as Attachment A to the permit.

C.7 Lake County Particulate Matter Contingency Measures [326 IAC 6.8-11-1]

The Permittee shall comply with the applicable provisions of 326 IAC 6.8-11-1 (formerly 326 IAC 6-1-11.2) (Lake County Particulate Matter Contingency Measures).

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 Continuous Compliance Plan [326 IAC 6.8-8-1] [326 IAC 6.8-8-8]

(a) Pursuant to 326 IAC 326 IAC 6.8-8-1, the Permittee shall submit to IDEM and maintain at source a copy of the Continuous Compliance Plan (CCP). The Permittee shall perform the inspections, monitoring and record keeping in accordance with the information in 326 IAC 6.8-8-5 through 326 IAC 6.8-8-7, or applicable procedures in the CCP.

(b) Pursuant to 326 IAC 6.8-8-8, the Permittee shall update the CCP, as needed, retain a copy of any changes and updates to the CCP at the source and make the updated CCP available for inspection by the department. The Permittee shall submit the updated CCP, if required to IDEM, OAQ within thirty (30) days of the update.

(c) Pursuant to 326 IAC 6.8-8, failure to submit a CCP, maintain all information required by the CCP at the source, or submit update to a CCP is a violation of 326 IAC 6.8-8.

C.13 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.14 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.15 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.16 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.17 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.18 Emission Statement [326 IAC 2-6] [326 IAC 2-8-4(3)]

(a) Pursuant to 326 IAC 2-6-3(a)(1), when the source is operating in Lake, Porter, or LaPorte Counties the Permittee shall submit an emission statement by July 1 following a calendar year when the source emits oxides of nitrogen into the ambient air equal to or greater than twenty-five (25) tons. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement 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) The emission statement 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.19 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.20 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.

Portable Source Requirement

C.21 Relocation of Portable Sources [326 IAC 2-14-4]

(a) This permit is approved for operation in all areas of Indiana except in severe nonattainment areas for ozone. This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2, and Emission Offset requirements in 326 IAC 2-3. Prior to locating in any severe nonattainment area, the Permittee must submit a request and obtain a permit modification.

(b) A request to relocate shall be submitted to IDEM, OAQ at least thirty (30) days prior to the intended date of relocation. This submittal shall include the following:

(1) A list of governmental officials entitled to receive notice of application to relocate. IC 13-15-3-1

(2) A list of adjacent landowners that the Permittee will send written notice to not more than ten (10) days after submission of the request to relocate. IC 13-15-8

(3) The new location address of the portable source.

(4) Whether or not this portable source will be relocated to another source.

(5) If relocating to another source:

(A) Name, location address, and permit number of the source this portable source is relocating to.

(B) Whether or not the sources will be considered as one source. See Non Rule Policy (NRP) Air-005 and Air-006.

(6) If the sources will be considered as one source, whether or not the source to be relocated to has received the necessary approvals from IDEM to allow the relocation.

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).

(c) A “Relocation Site Approval” letter shall be obtained prior to relocating.

(d) A valid operation permit consists of this document and any subsequent “Relocation Site Approval” letter specifying the current location of the portable plant.

Stratospheric Ozone Protection

C.22 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 & Hot Oil Heater (HOH)

(a) One (1) drum-mix, hot-mix asphalt plant, identified as EU-01, constructed in 1998, with a maximum throughput capacity of 325 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) 47.25 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 distillate fuel oil, and waste oil, as available, and equipped with one (1) cyclone collector and one (1) baghouse in series for particulate control, exhausting through one (1) stack, identified as stack SV-1. No crushing of RAP or grinding of shingles occurs at this source.

(b) Material feeding, conveying, and loading operations consisting of the following:

(1) Raw material storage piles, including:

(A) Sand storage piles, with a maximum anticipated pile size of 0.5 acre;

(B) Limestone storage piles, with a maximum anticipated pile size of 1.0 acre;

(C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.0 acre;

(D) Gravel storage piles, with a maximum anticipated pile size of 0.5 acre;

(F) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 0.05 acre; and

(E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile siz of 0.05 acre.

(2) Two (2) vibratory screens;

(3) Six (6) hoppers, including:

(A) Four (4) cold feed bins for coarse to fine aggregate; and

(B) Two (2) feed bins for recycled asphalt pavement and recycled shingles.

(4) Four (4) conveyors, including:

(A) Three (3) conveyors for transporting coarse to fine aggregates, recycled asphalt pavement, and recycled shingles to the rotary dryer;

(B) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silo.

(6) Two (2) hot-mixed asphalt storage silo;

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt operation is considered an affected facility.

Insignificant Activities: Boilers

(a) One (1) 1.16 million British thermal units per hour (MMBtu/hr) hot oil heater, identified as EU-02, constructed in 1998, firing No. 2 fuel oil, uncontrolled and exhausting to stack SV-2; [326 IAC 6-2, 326 IAC 6.5, 326 IAC 6.8]

(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 600,000 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 0.306 pounds per ton of asphalt processed.

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.

Note: The source has opted to limit source-wide potential to emit PM to less than 125 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit PM from all of its emission units of less than 125 tons per twelve (12) consecutive month period.

D.1.2 FESOP Limits: PM10, PM2.5, SO2, NOx, VOC, and CO [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 2-1.1-5][326 IAC 8-1-6]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-7, 326 IAC 2-2, 326 IAC 2-3, and 326 IAC 2-1.1-5 not applicable, the Permittee shall comply with the following:

(a) The amount of hot-mix asphalt processed shall not exceed 600,000 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 0.130 pounds per ton of asphalt processed.

(c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.149 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) NOx emissions from the dryer/mixer shall not exceed 0.055 pounds per ton of asphalt processed.

(f) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

(g) CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, NOx, 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, NOx, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-1.1-5 (Nonattainment New Source Review) not applicable.

Note: The source has opted to limit source-wide potential to emit PM10, PM2.5, SO2, NOx, VOC, and CO, to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit of PM10, PM2.5, SO2, NOx, VOC, and CO, each, from all of its emission units of less than 50 tons per twelve (12) consecutive month period.

Additionally, compliance with the limit in condition D.1.2(f) 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 Limits: SO2, NOx, GHGs as CO2e, and HAPs [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, and in order to render 326 IAC 2-2, 326 IAC 2-3, 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 waste fuel oil shall not exceed 0.75% by weight.

(3) The waste oil combusted shall not contain more than 1.00% ash, 0.20% chlorine, and 0.01% lead.

(4) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned.

(5) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.

(6) The SO2 emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of Blast Furnace slag processed in the aggregate mix.

(7) The sulfur content of the steel slag shall not exceed 0.66% by weight.

(8) 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 414 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 682,347 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(C) Waste oil usage shall not exceed 439,425 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 60,000 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) SO_2 emissions shall not exceed 46.42 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) NOx emissions shall not exceed 20.70 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(3) CO2 equivalent emissions (CO2e) shall not exceed 25,020.07 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(4) HCl emissions shall not exceed 2.90 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, NOx, greenhouse gases (GHGs as CO2e), and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO2 and NOx to less than 100 tons per twelve (12) consecutive month period, each, greenhouse gases to less than 100,000 tons CO_2 equivalent (CO_2e) emissions 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 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.

Note: The source has opted to limit source-wide potential to emit SO2 and NOx to less than 50 tons per twelve (12) consecutive month period, greenhouse gases to less than 50,000 tons CO_2 equivalent emissions (CO_2e) per twelve (12) consecutive month period, any single HAP to less than five (5) tons per twelve (12) consecutive month period, and total HAPs to less than twelve and five tenths (12.5) tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit from all of its emission units of SO2 and NOx of less than 50 tons per twelve (12) consecutive month period, of greenhouse gases of less than 50,000 tons CO2 equivalent emissions (CO2e) per twelve (12) consecutive month period, of any single HAP of less than five (5) tons per twelve (12) consecutive month period, and of total HAPs of less than twelve and five tenths (12.5) tons per twelve (12) consecutive month period.

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-02, shall not exceed six tenths (0.6) pounds of particulate matter per MMBtu heat input.

D.1.5 Particulate Emission Limits [326 IAC 6.5-1-2][326 IAC 6.8-1-2]

(a) Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer, hot oil heater, and any enclosed material handling, screening, and/or conveying systems, each, shall not exceed 0.03 grain per dry standard cubic foot of exhaust air when operating in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties.

(b) Pursuant to 326 IAC 6.8-1-2(a) (Particulate Matter Limitations for Lake County), particulate matter (PM) emissions from the dryer/mixer, hot oil heater, and any enclosed material handling, screening, and/or conveying systems, each, shall not exceed 0.03 grain per dry standard cubic foot of exhaust air when operating in Lake County.

D.1.6 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 is considered distillate oil 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.1.7 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.1.8 Particulate Control (PM/PM10/PM2.5)

(a) In order to comply with Conditions D.1.1(b), D.1.2(b), D.1.2(c), and D.1.5, the cyclone collector and baghouse in series 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.1.9 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), D.1.2(c),and D.1.5, 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 within 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.

D.1.10 Sulfur Dioxide (SO_2) 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), and D.1.6 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.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 47.25 MMBtu/hr 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.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 47.25 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.

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.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 47.25 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.1.11 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.1.12 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 usage according to the following formulas:

(a) Sulfur Dioxide (SO2) Emission Calculation

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

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
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 lb/MMCF of natural gas
E_O = 71.0 lb/1000 gallons of No. 2 fuel oil
E_W = 110.3 lb/1000 gallons of Waste oil
E_B = 0.74 lb/ton of blast furnace slag used
E_T = 0.0014 lb/ton of steel slag used

(b) Nitrogen Oxides (NOx) Emission Calculation:

$$N = \frac{G(E_G) + O(E_O) + W(E_W)}{2{,}000 \text{ lbs/ton}}$$

where:
N = tons of nitrogen oxide 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
W = gallons of waste oil used in the last 12 months
E_G = 100 lb/million cubic feet of natural gas
E_O = 20.0 lb/1000 gallons of No. 2 fuel oil
E_W = 19.0 lb/1000 gallons of waste oil

(c) CO2 Equivalent (CO2e) Emission Calculations:

$$CO_2 = \frac{[G(X_G) + O(X_O) + W(X_W)]}{2{,}000 \text{ lbs/ton}}$$

$$CH_4 = \frac{[G(X_G) + O(X_O) + W(X_W)]}{2{,}000 \text{ lbs/ton}}$$

$$N_2O = \frac{[G(X_G) + O(X_O) + W(X_W)]}{2{,}000 \text{ lbs/ton}}$$

$$CO_2e = \sum[(CO_2 \times CO_2 \text{ GWP}) + (CH_4 \times CH_4 \text{ GWP}) + (N_2O \times N_2O \text{ GWP})]$$

Where:
CO_2 = tons of CO_2 emissions for a 12-month consecutive period;
CH_4 = tons of CH_4 emissions for a 12-month consecutive period;
N_2O = tons of N_2O emissions for a 12-month consecutive period;
CO_2e = tons of CO_2e equivalent 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;
W = gallons of waste oil used in the last 12 months.

CO2:
X_G = 120,161.84 lb/MMCF of natural gas;
X_O = 22,501.41 lb/1000 gallons of No. 2 fuel oil;
X_W = 22,024.15 lb/1000 gallons of waste oil;

CH4:
X_G = 2.49 lb/MMCF of natural gas;
X_O = 0.91 lb/1000 gallons of No. 2 fuel oil;
X_W = 0.89 lb/1000 gallons of waste oil;

N2O:
X_G = 2.20 lb/MMCF of natural gas;
X_O = 0.26 lb/1000 gallons of No. 2 fuel oil;
X_W = 0.18 lb/1000 gallons of waste oil;

Greenhouse Warming Potentials (GWP)

Carbon dioxide (CO2)	= 1
Methane (CH4)	= 21
Nitrous oxide (N2O)	= 310

(d) 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 = 13.2 lbs/1000 gallons of waste oil.

D.1.13 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 second 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.1.14 Visible Emissions Notations

(a) Visible emission notations from the conveyors, screens, material transfer points, and dryer/mixer stack (SV-1) 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.1.15 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 two (2.0) and eight (8.0) 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.1.16 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.

D.1.17 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have 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).

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

D.1.18 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 and D.1.6, 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 and D.1.6.

(1) Calendar dates covered in the compliance determination period;

(2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide (SO2), nitrogen oxides (NOx), and CO2 equivalent (CO2e) 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 and waste oil, and the chlorine content of 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.1.14, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack (SV-1) 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.1.15, 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.1.19 Reporting Requirements

A quarterly summary 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]

(a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the liquid binders (asphalt emulsions) shall not exceed 33.30 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 35.05 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 47.57 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 133.20 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 71.77 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 1,332.02 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 render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Note: The source has opted to limit source-wide potential to emit VOCs to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit from all of its emission units of less than 50 tons per twelve (12) consecutive month period.

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(c)(1) through (5), 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(c)(1) through (5).

(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 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 D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-8-4(10)]: Storage Vessels (Tanks)

(b) Three (3) storage tanks, exhausting at stacks SV-3, SV-4, and SV-5, including:

(1) One (1) liquid asphalt cement storage tank, identified as EU-03, constructed in 1998, with a maximum storage capacity of 30,000 gallons; [326 IAC 8 9]

(2) One (1) waste oil storage tank, identified as EU-04, constructed in 1998, with a maximum storage capacity of 30,000 gallons; [326 IAC 8 9] and

(3) One (1) No. 2 fuel oil storage tank, identified as EU-05, constructed in 1998, with a maximum storage capacity of 10,000 gallons. [326 IAC 8 9]

(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.3.1 Volatile Organic Liquid Storage Vessels [326 IAC 8-9]

Pursuant to 326 IAC 8-9-1(b), the storage tanks (EU-03 through EU-05) are each subject to the reporting and recordkeeping provisions of this rule when operating in Clark, Floyd, Lake, or Porter Counties, as follows:

(a) Pursuant to 326 IAC 8-9-6(a), the Permittee shall keep all records required by this section, for each of the storage tanks, for three (3) years unless specified otherwise. Records required by subsection (b) shall be maintained for the life of the vessel.

(b) Pursuant to 326 IAC 8-9-6(b), the Permittee shall maintain a record for each of the storage tanks, and submit to the department a report containing the following information for each vessel:

(1) The vessel identification number.

(2) The vessel dimensions.

(3) The vessel capacity.

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 1998, with a maximum throughput capacity of 325 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) 47.25 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 distillate fuel oil, and waste oil, as available, and equipped with one (1) cyclone collector and one (1) baghouse in series for particulate control, exhausting through one (1) stack, identified as stack SV-1. No crushing of RAP or grinding of shingles occurs at this source.

(b) Material feeding, conveying, and loading operations consisting of the following:

(1) Raw material storage piles, including:

(A) Sand storage piles, with a maximum anticipated pile size of 0.5 acre;

(B) Limestone storage piles, with a maximum anticipated pile size of 1.0 acre;

(C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.0 acre;

(D) Gravel storage piles, with a maximum anticipated pile size of 0.5 acre;

(F) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 0.05 acre; and

(E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 0.05 acre.

(2) Two (2) vibratory screens;

(3) Six (6) hoppers, including:

(A) Four (4) cold feed bins for coarse to fine aggregate; and

(B) Two (2) feed bins for recycled asphalt pavement and recycled shingles.

(4) Four (4) conveyors, including:

(A) Three (3) conveyors for transporting coarse to fine aggregates, recycled asphalt pavement, and recycled shingles to the rotary dryer;

(B) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silo.

(6) Two (2) hot-mixed asphalt storage silo;

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt operation 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]

The Permittee shall perform the stack testing required under NSPS 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner to document compliance with Condition E.1.2. 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 Section C - Performance Testing.

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Paul H. Rohe Company, Inc.
Initial Source Address: 992 South County Road 800 East, Greensburg, Indiana 47240
FESOP Permit No.: F031-31702-03258

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: Paul H. Rohe Company, Inc.
Initial Source Address: 992 South County Road 800 East, Greensburg, Indiana 47240
FESOP Permit No.: F031-31702-03258

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- 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: Paul H. Rohe Company, Inc.
Initial Source Address: 992 South County Road 800 East, Greensburg, Indiana 47240
FESOP Permit No.: F031-31702-03258
Facility: Dryer/Mixer
Parameter: **Hot-mix Asphalt Production**
Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 600,000 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: Paul H. Rohe Company, Inc.
Initial Source Address: 992 South County Road 800 East, Greensburg, Indiana 47240
FESOP Permit No.: F031-31702-03258
Facility: Drum-mix Dryer/Mixer

Parameter: **Fuel & Slag Usage / SO2, NOx, & HCL emissions**

Emission Limits: *Sulfur dioxide (SO_2)* emissions shall not exceed 46.42 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(a).

Nitrogen oxides (NOx) emissions shall not exceed 20.70 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(b).

CO2 equivalent emissions (CO2e) shall not exceed 25,020.07 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(c).

Hydrogen Chloride (HCL) emissions shall not exceed 2.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(d).

Fuel & Slag Limits: When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer and the large generator, 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) (dryer)	414
No. 2 Distillate Fuel Oil (gallons) (dryer)	682,347
Waste Oil (gallons) (dryer)	439,425
Blast Furnace Slag (tons) (dryer)	60,000

Facility: Cold-mix Asphalt Production

Parameter: **Binder Usage / VOC Emissions**

Emission Limits: *Volatile Organic Compound (VOC)* emissions from the sum of the binders shall not exceed 33.30 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 Binder	Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	35.05
Cutback Asphalt Medium Cure	47.57
Cutback Asphalt Slow Cure	133.20
Emulsified Asphalt	71.77
Other Asphalt	1,332.02

FESOP Quarterly Report - Fuel & Slag Usage / SO2, NOx, CO2e, & HCL emissions **Page 2 of 2**

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)	Nitrogen Oxides (NOx) Emissions (tons per 12 months)	CO2 equivalent (CO2e) 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)							
	Waste Oil (gallons)							
	Blast Furnace Slag (tons)							
	Steel Slag Usage (tons)							
Month 2	Natural Gas (million cubic feet)							
	No. 2 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)							
	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 (Asphalt Emulsion) Usage / VOC Emissions

QUARTER: _____ YEAR: _____

Month	Binder/Emulsion Types (tons)	Column 1 Solvent Usage This Month	Column 2 Solvent Usage Previous 11 Months	Column 1 + Column 2 Solvent Usage 12 Month Total	Equation Results 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: _____

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

Type of Binder	Adjustment Factor
Cutback Asphalt Rapid Cure	1.053
Cutback Asphalt Medium Cure	1.429
Cutback Asphalt Slow Cure	4.0
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: Paul H. Rohe Company, Inc.
Initial Source Address: 992 South County Road 800 East, Greensburg, Indiana 47240
FESOP Permit No.: F031-31702-03258

Months: _____ **to** _____ **Year:** _____

Page 1 of 2

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".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ 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:**
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:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

FEDERALLY ENFORCEABLE
STATE OPERATING PERMIT RENEWAL
OFFICE OF AIR QUALITY

Paul H. Rohe Company, Inc.
Portable

Attachment A

HOT-MIX ASPHALT CONCRETE PLANT

FUGITIVE PARTICULATE MATTER EMISSIONS CONTROL PLAN

F031-31702-03258

1. Fugitive particulate matter (dust) emissions from paved roads, unpaved roads, and parking lots will 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 from either rain or the application of water.
      3. Limiting travel from unpaved areas onto paved areas.
      4. Maintaining a good roadway surface. (free of potholes)

   B. Unpaved roads and parking lots:

      1. Paving with asphalt when possible.
      2. Treating with water on an as needed basis.
      3. Minimizing traffic in the unpaved areas.

2. Fugitive particulate matter (dust) emissions from material handling will be controlled by one or more of the following measures:

   A. Paved roads and parking lots:

      1. Maintain vehicle bodies in a condition to prevent leaking.
      2. Maintain a 10 MPH speed limit in the yard.

   B. Unpaved roads and parking lots:

      1. Handle aggregates in a moist condition.
      2. Apply water on an as needed basis.
      3. Minimize drop heights of aggregates.

3. Plan Implementation

   A. The effective date of this plan was April 9, 1998.

   B. Date of most recent update: April 13, 2012.

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

OFFICE OF AIR QUALITY

Paul H. Rohe Company, Inc.
Portable

Attachment B

Title 40: Protection of Environment

PART 60—NEW SOURCE PERFORMANCE STANDARDS

SUBPART I - STANDARDS OF PERFORMANCE
FOR HOT MIX ASPHALT FACILITIES

F031-31702-03258

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/cgi/t/text/text-idx?c=ecfr&sid=875648a88dd2168ac2096fe26e3e4c98&rgn=div6&view=text&node=40:6.0.1.1.1.20&idno=40

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
General Asphalt Federally Enforceable State Operating Permit (FESOP)
Transitioning to a FESOP Renewal

Source Background and Description

Source Name:	Paul H. Rohe Company, Inc.
Current Source Location:	992 South County Road 800 East, Greensburg, Indiana 47240
Current County:	Decatur
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.:	F031-31702-03258
Permit Reviewer:	Hannah L. Desrosiers

The Office of Air Quality (OAQ) has reviewed an operating permit renewal application from Paul H. Rohe Company, Inc. relating to the continued operation of an existing portable drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation.

History

On April 5, 2012, Paul H. Rohe Company, Inc. submitted an application to the OAQ requesting to renew its General Asphalt FESOP operating permit. IDEM, OAQ is no longer issuing General Asphalt FESOP permits until the standard permit language can be updated to coincide with current environmental standards and regulations. Therefore, Paul H. Rohe Company, Inc. will be issued a Federally Enforceable State Operating Permit (FESOP) Renewal. The transition from a General Asphalt FESOP to a FESOP incorporates multiple Title I changes, as indicated throughout this technical support document.

Paul H. Rohe Company, Inc. has confirmed that they want the flexibility to process blast furnace slag, steel slag, and recycled asphalt shingles (asbestos-free post consumer waste and/or factory seconds) in their aggregate mix, they do not perform any crushing of recycled asphalt pavement (RAP) or any aggregate, and they do not perform any grinding of any kind of recycled asphalt shingles (RAS), asbestos-free or otherwise. Finally, Paul H. Rohe Company, Inc. has indicated that they want the flexibility to be able to co-locate this portable hot-mix asphalt plant at the same site as one of their other hot-mix asphalt plants (stationary or portable).

Paul H. Rohe Company, Inc. was issued a General Asphalt FESOP (No.: F031-24792-03258), on January 15, 2008.

Source Definition

This source consists of the following plants:

(a) Paul H. Rohe Co., Inc. located at 992 South County Road 800 East, Greensburg, Indiana 47240 (source ID #031-03258)

(b) Hot Mix Inc. located at 992 South County Road 800 East, Greensburg, Indiana 47240 (source ID #031-00028)

(c) New Point Stone Company, Inc. located at 992 South County Road 800 East, Greensburg, Indiana 47240 (source ID #031-00005)

Paul H. Rohe Company, Inc. operates its hot mix asphalt plant (source number 031-03258) in the same quarry as Hot Mix, Inc.'s asphalt pavement plant (source number 031-00028) and the New Point Stone Company, Inc.'s stone crushing plant (source number 031-00005). IDEM, OAQ has examined whether the three plants are part of the same major source. The term "major source" is defined at 326 IAC 2-7-1(22). In order for two or more plants to be considered one major source, they must meet all three of the following criteria:

(1) the plants must be under common ownership or common control;

(2) the plants must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for the other; and,

(3) the plants must be located on contiguous or adjacent properties.

The New Point Stone plant is 100 % owned by New Point Stone Company, Inc. The Paul H. Rohe Company owns 100% of the Paul H. Rohe hot mix plant. Hot Mix, Inc. is owned by Paul H. Rohe Company and New Point Stone Company, Inc., with each owning a 50% share. IDEM's Nonrule Policy Document Air-005 states that if two plants have common corporate officers or if one entity has ownership of fifty-one percent (51%) or more of both plants, then common ownership exists. There are no common corporate officers or board of directors between the three companies. Since neither New Point Stone nor Paul H. Rohe own 51% of Hot Mix, Inc., there is no common ownership between the three plants.

IDEM's Nonrule Policy Document Air-005 also sets out two independent tests to determine if common control exists. The first test, the auxiliary activity test, determines whether one source performs an auxiliary activity which directly serves the purpose of the primary activity and whether the owner or operator of the primary activity has a major role in the day-to-day operations of the auxiliary activity. An auxiliary activity directly serves the purpose of a primary activity by supplying a necessary raw material to the primary activity or performing an integral part of the production process for the primary activity.

Day-to-day control of the auxiliary activity by the primary activity may be evidenced by several factors, including:

- is a majority of the output of the auxiliary activity provided to the primary activity?
- can the auxiliary activity contract to provide it products/services to a third-party without the consent of the primary activity?
- can the primary activity assume control of the auxiliary activity under any circumstances?
- is the auxiliary activity required to complete periodic reports to the primary activity?

If one or a combination of these questions is answered affirmatively, common control may exist.

The New Point Stone plant does perform an auxiliary activity for both the Hot Mix plant and the Paul H. Rohe plant by supplying the crushed stone used in the production of asphalt pavement. New Point Stone supplies less than 50% of its output to the Paul H. Rohe plant and also provides less than 50% of its output to the Hot Mix plant. All the plants are free to enter into contracts with other companies. None of the companies has the power to assume control of any of the others under any circumstances. None of the plants is required to submit any reports to any of the others. IDEM finds that none of the plants has a major role in the day to day operation of the other two plants. Therefore the first common control test is not met for any the plants.

The second common control test in the nonrule policy is the "but/for" test. This test focuses on whether the auxiliary activity would exist absent the needs of the primary activity. If all or a majority of the output of the auxiliary activity is consumed by the primary activity the "but/for" test is satisfied. The New Point Stone plant supplies less than 50% of its output to the Hot Mix plant and less than 50% of its output to the Paul H. Rohe plant. The asphalt plants do not supply anything to the stone plant. If the stone plant were to shut down, the asphalt plants could obtain stone from other sources. If the asphalt plants were to shut down, the stone plant would still have most of its current customers and could continue operating. Therefore, the second

common control test is also not met. IDEM finds that the plants are not under common control. Since neither common ownership nor common control exists, the first part of the definition of major source is not met for any of the three plants.

The SIC Code Manual of 1987 sets out how to determine the proper SIC Code for each type of business. More information about SIC Codes is available at http://www.osha.gov/pls/imis/sic_manual.html on the Internet. The New Point Stone plant has the two-digit SIC Code 14 for the Major Group Mining and Quarrying of Nonmetallic Minerals, Except Fuels. The two asphalt plants have the two-digit SIC Code 29 for the Major Group Petroleum Refining and Related Industries. Therefore, only the two asphalt plants have the same two-digit SIC Code.

A plant is a support facility to another plant if it dedicates 50% or more of its output to the other plant. The New Point Stone plant sends less than 50% of its annual output to each of the asphalt plants. The asphalt plants do not send any of their asphalt pavement production to the New Point Stone plant. Since there is no support facility relationship between any of the plants and only the asphalt plants have the same two-digit SIC Code, only the asphalt plants meet the second part of the major source definition.

All three plants are located on contiguous properties, so the third part of the definition is met for all the plants. However, since none of the plants meet all three parts of the major source definition, IDEM, OAQ has determined that the Paul H. Rohe asphalt plant, the Hot Mix asphalt plant, and the New Point Stone plant are not part of the same major source.

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 1998, with a maximum throughput capacity of 325 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) 47.25 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 distillate fuel oil, and waste oil, as available, and equipped with one (1) cyclone collector and one (1) baghouse in series for particulate control, exhausting through one (1) stack, identified as stack SV-1. No crushing of RAP or grinding of shingles occurs at this source.

(b) Material feeding, conveying, and loading operations consisting of the following:

(1) Raw material storage piles, including:

(A) Sand storage piles, with a maximum anticipated pile size of 0.5 acre;

(B) Limestone storage piles, with a maximum anticipated pile size of 1.0 acre;

(C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.0 acre;

(D) Gravel storage piles, with a maximum anticipated pile size of 0.5 acre;

(F) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 0.05 acre; and

(E) Blast furnace and/or steel slag storage pile(s), with a maximum anticipated pile size of 0.05 acre.

(2) Two (2) vibratory screens;

(3) Six (6) hoppers, including:

(A) Four (4) cold feed bins for coarse to fine aggregate; and

(B) Two (2) feed bins for recycled asphalt pavement and recycled shingles.

(4) Four (4) conveyors, including:

(A) Three (3) conveyors for transporting coarse to fine aggregates, recycled asphalt pavement, and recycled shingles to the rotary dryer;

(B) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silo.

(6) Two (2) hot-mixed asphalt storage silo;

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot-mix Asphalt Facilities, this drum-mix, hot-mix asphalt operation 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

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) 1.16 million British thermal units per hour (MMBtu/hr) hot oil heater, identified as EU-02, constructed in 1998, firing No. 2 fuel oil, uncontrolled and exhausting to stack SV-2; [326 IAC 6-2, 326 IAC 6.5, 326 IAC 6.8]

(b) Three (3) storage tanks, exhausting at stacks SV-3, SV-4, and SV-5, including:

(1) One (1) liquid asphalt cement storage tank, identified as EU-03, constructed in 1998, with a maximum storage capacity of 30,000 gallons; [326 IAC 8 9]

(2) One (1) waste oil storage tank, identified as EU-04, constructed in 1998, with a maximum storage capacity of 30,000 gallons; [326 IAC 8 9] and

(3) One (1) No. 2 fuel oil storage tank, identified as EU-05, constructed in 1998, with a maximum storage capacity of 10,000 gallons. [326 IAC 8 9]

(c) 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;

(d) Combustion source flame safety purging on startup;

(e) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;

(f) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(g) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;

(h) 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;

(i) Closed loop heating and cooling systems;

(j) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(k) Paved and unpaved roads and parking lots with public access. [326 IAC 2-8, 326 IAC 6-4, 326 IAC 6-5, 326 IAC 6.8-10]

Existing Approvals

The source has been operating under General Asphalt FESOP No.: F031-24792-03258, issued on January 15, 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 Decatur County. The following attainment status designations are applicable to Decatur 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.
PM2.5	Unclassifiable or attainment effective April 5, 2005.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.

[1] Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(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. Decatur 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) $PM_{2.5}$
Decatur 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 $PM_{2.5}$ and SO_2 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
Decatur 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.

Portable Source

(a) Initial Location
This is a portable source and its initial location was 14205 North Rosfeld Road, Sunman, Indiana 47041, Ripley County.

(b) Current Location
This portable source is currently located at 992 South County Road 800 East, Greensburg, Indiana 47240, Decatur County.

(c) PSD and Emission Offset Requirements
The emissions from this portable source were reviewed under the requirements of the Prevention of Significant Deterioration (PSD) 326 IAC 2-2, 326 IAC 2-1.1-5 (Nonattainment New Source Review), and Emission Offset 326 IAC 2-3.

(d) Relocation Locations
The Permittee is authorized to relocate this portable drum hot mix asphalt plant to all areas of the state except for any county designated as "extreme', “severe” or “serious” non-attainment for any National Ambient Air Quality Standard (NAAQS). *This is a Title I change.*

Currently, no county in Indiana is designated "extreme", “severe”, or “serious” non-attainment for any pollutant. Therefore, since the limited potential emissions of all regulated pollutants are limited to less than 50 tons per year, this source may relocate to any county in Indiana, and will be a minor source under 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment New Source Review), and 326 IAC 2-3 (Emission Offset).

Unrestricted Potential Emissions

The following table reflects the unrestricted potential emissions of the source.

Pollutant	tons/year
PM	40,008.69
PM10(1)	9,298.13
PM2.5	2,153.76
SO2	607.98
NOx	79.02
VOC	34,283.77
CO	189.34
GHG's as CO_2e	48,350.38
Total HAPs (2)	8,945.83
Maximum (Worst Case) HAP	3,079.24 (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 1,1,1-trichloroethane, 2,2,4-trimethylpentane, 2-butanone, 2-methylnaphthalene, acenaphthene, acetaldehyde, acrolein, benzene, bis(2-ethylhexyl)phthalate, bromomethane, carbon disulfide, chloromethane, chrysene, 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, trichloroethene, xylene, and arsenic, cadmium, chromium, 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, VOCs, and CO is equal to or greater than 100 tons per year, each. However, the Permittee has agreed to limit the source's PM10, PM2.5, SO2, VOCs, 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 NOx is 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/or 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 continue 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 CO2e**	**Total HAPs**	**Worst Single HAP**
Ducted/Ductable Emissions										
Dryer Fuel Combustion (worst case) (1)	14.06	11.21	11.21	24.22	20.70	1.14	17.38	25,020.07	3.48	2.90 (HCL)
Dryer/Mixer (2) (Process)	91.95	39.08	44.75	17.40	16.50	9.60	39.00	9,975.60	3.20	0.93 (formaldehyde)
Dryer/Mixer Slag Processing (3)	0	0	0	22.20	0	0	0	0	0	N/A
Hot Oil Heater Fuel Combustion (worst case)	0.07	0.12	0.12	2.58	0.73	0.01	0.18	1,016.16	$2.58E^{-03}$	$2.21E^{-03}$ (hexane)
Generator (< 600 hp) Fuel Combustion (crusher) $^{\alpha}$	0	0	0	0	0	0	0	0	0	N/A
Generator (> 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	0	N/A
Worst Case Emissions $^{\beta}$	**92.02**	**39.20**	**44.87**	**49.00**	**21.42**	**9.61**	**39.18**	**26,036.23**	**3.48**	**2.90 (HCL)**
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, and On-Site Yard (3)	0.33	0.33	0.33	0	0	5.14	0.86	0	0.09	0.03 (formaldehyde)
Material Storage Piles	0.93	0.33	0.33	0	0	0	0	0	0	N/A
Material Processing and Handling (3)	1.94	0.92	0.14	0	0	0	0	0	0	N/A
Material Crushing, Screening, and Conveying (3)	7.98	2.79	2.79	0	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case) (1)	21.30	5.43	0.54	0	0	0	0	0	0	N/A
Cold Mix Asphalt Production	0	0	0	0	0	33.30	0	0	8.69	3.00 (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	**32.48**	**9.80**	**4.13**	**0.00**	**0.00**	**38.44**	**0.86**	**0.00**	**8.77**	**3.00 (xylenes)**
Total Limited/ Controlled Emissions (5)	**124.50**	**49.00**	**49.00**	**49.00**	**21.42**	**48.05**	**40.05**	**26,036.23**	**12.25**	**3.00 (xylenes)**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	100	250	250	250	250	100,000	N/A	N/A
Emission Offset/ Nonattainment NSR Major Source Thresholds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	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 CO2e 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 The crusher has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63; therefore, the emissions are not counted toward PSD and Title V applicability.

β 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).

(5) The source has opted to limit source-wide potential to emit PM10, PM2.5, SO2, NOx, VOC, and CO, to less than 50 tons per twelve (12) consecutive month period, and PM to less than 125 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units equal to or less than those that are issued within this permit.

(a) FESOP Status

This existing source is not a Title V major portable source, because the potential to emit criteria pollutants from the entire source will 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 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 an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

(1) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), PM10, PM2.5, SO2, NOx, VOC, and CO emissions from the dryer/mixer shall be limited as follows:

(A) The amount of hot-mix asphalt processed shall not exceed 600,000 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 0.130 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 0.149 pounds per ton of asphalt processed. *This is a new requirement for this source. 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 a new requirement for this source. This is a Title I change;*

(E) The NOx emissions from the dryer/mixer shall not exceed 0.055 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change;*

(F) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change; and*

(G) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change.*

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, NOx, 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, NOx, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-1.1-5 (Nonattainment New Source Review) not applicable.

Note: The source has opted to continue to limit source-wide potential to emit PM10, PM2.5, SO2, NOx, VOC, and CO to less than 50 tons per twelve (12) consecutive month period, each. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit of PM10, PM2.5, SO2, NOx, VOC, and CO, each, from all of its emission units of less than 50 tons per twelve (12) consecutive month period.

(2) Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall continue to control PM, 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.*

(2) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), SO2, NOx, 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 continue to not exceed 0.50% by weight. *This is an existing requirement for this source.*

(ii) The sulfur content of the waste fuel oil shall not exceed 0.75% by weight. *This is a change from a sulfur content of less than or equal to 1% by weight. This is a Title I change*.

(iii) The waste oil combusted shall not contain more than 1.00% ash, 0.20% chlorine, and 0.01% lead. *This is a new requirement for this source. This is a Title I change*.

(iv) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned. *This is a new requirement for this source. This is a Title I change*.

(v) 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*.

(vi) 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*.

(vii) The sulfur content of the steel slag shall not exceed 1.50% by weight. *This is a new requirement for this source. This is a Title I change*.

(viii) 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:

(α) Natural gas usage shall not exceed 414 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 180 million cubic feet per twelve (12) month period rolled on a monthly basis. Title I change*;

(β) No. 2 fuel oil usage shall not exceed 682,347 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 1,200,000 gallons per twelve (12) month period rolled on a monthly basis. This is a Title I change*;

(χ) Waste oil usage shall not exceed 439,425 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 600,000 gallons per twelve (12) month period rolled on a monthly basis". 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.*

(δ) The Blast Furnace slag usage shall not exceed 60,000 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.*

(ε) 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 0.84 tons/yr (see TSD Appendix A.1, page 6 of 20). 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 20).

(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) SO_2 emissions from the dryer/mixer shall not exceed 46.42 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 50 tons of sulfur dioxide for every twelve (12) month consecutive period. This is a Title I change.*

SO2 = 24.22 + 22.20 = 46.42

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula: *The formula used to determine compliance with the FESOP SO2 limit has been revised to reflect the actual fuels used at the source. This is a Title I change.*

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

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
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 lb/MMCF of natural gas
E_O = 71.0 lb/1000 gallons of No. 2 fuel oil
E_W = 110.3 lb/1000 gallons of waste oil
E_B = 0.74 lb/ton of blast furnace slag used
E_T = 0.0014 lb/ton of steel slag used

Note: The emission factors used to determine compliance with the FESOP SO2 limit have been updated to reflect the AP 42 values for the actual dryer capacity.

(ii) Even though the unlimited PTE NOx of the dryer/mixer burner is less than 100 tons per year, NOx emissions will be limited as follows to allow for the co-location of an additional asphalt plant to the same location, as

long as the co-located plant has a limited potential to emit from all of its emission units of less than 50 tons per year of NOx.

NOx emissions from the dryer/mixer shall not exceed 20.70 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 50 tons of nitrogen oxide for every twelve (12) month consecutive period. This is a Title I change.*

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula: *The formula used to determine compliance with the FESOP NOx limit has been revised to reflect the actual fuels used at the source. This is a Title I change.*

$$N = \frac{G(E_G) + O(E_O) + W(E_W)}{2{,}000 \text{ lbs/ton}}$$

where:
N = tons of nitrogen oxide 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
W = gallons of waste oil used in the last 12 months
E_G = 100 lb/million cubic feet of natural gas
E_O = 20.0 lb/1000 gallons of No. 2 fuel oil
E_W = 19.0 lb/1000 gallons of waste oil

Note: The emission factors used to determine compliance with the FESOP NOx limit have been updated to reflect the AP 42 values for the actual dryer capacity.

(iii) Even though the unlimited PTE CO2e of this source is less than 100,000 tons per year, CO2e emissions will be limited as follows to allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant has a limited potential to emit from all of its emission units of less than 50,000 tons per year of CO2e.

CO2 equivalent (CO2e) emissions from the dryer/mixer shall not exceed 25,020.07 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 formulas: *This is a new requirement for this source. This is a Title I change.*

$$CO_2 = \frac{[G(X_G) + O(X_O) + W(X_W)]}{2{,}000 \text{ lbs/ton}}$$

$$CH_4 = \frac{[G(X_G) + O(X_O) + W(X_W)]}{2{,}000 \text{ lbs/ton}}$$

$$N_2O = \frac{[G(X_G) + O(X_O) + W(X_W)]}{2{,}000 \text{ lbs/ton}}$$

$$CO_2e = \sum[(CO_2 \times CO_2 \text{ GWP}) + (CH_4 \times CH_4 \text{ GWP}) + (N_2O \times N_2O \text{ GWP})]$$

Where:
CO_2 = tons of CO_2 emissions for a 12-month consecutive period;
CH_4 = tons of CH_4 emissions for a 12-month consecutive period;
N_2O = tons of N_2O emissions for a 12-month consecutive period;
CO_2e = tons of CO_2e equivalent 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;
W = gallons of waste oil used in the last 12 months.

CO2:
X_G = 120,161.84 lb/MMCF of natural gas;
X_O = 22,501.41 lb/1000 gallons of No. 2 fuel oil;
X_W = 22,024.15 lb/1000 gallons of waste oil;

CH4:
X_G = 2.49 lb/MMCF of natural gas;
X_O = 0.91 lb/1000 gallons of No. 2 fuel oil;
X_W = 0.89 lb/1000 gallons of waste oil;

N2O:
X_G = 2.20 lb/MMCF of natural gas;
X_O = 0.26 lb/1000 gallons of No. 2 fuel oil;
X_W = 0.18 lb/1000 gallons of waste oil;

Greenhouse Warming Potentials (GWP)

Carbon dioxide (CO2)	= 1
Methane (CH4)	= 21
Nitrous oxide (N2O)	= 310

(iv) HCl emissions from the dryer/mixer shall not exceed 3.00 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.*

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

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 = 13.2 lbs/1000 gallons 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, NOx, greenhouse gases, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO2 and NOx to less than 100 tons per twelve (12) consecutive month period, each, greenhouse gases to less than 100,000 tons CO_2 equivalent emissions (CO_2e) per 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 the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Note: The source has opted to limit source-wide potential to emit SO2 and NOx to less than 50 tons per twelve (12) consecutive month period, greenhouse gases to less than 50,000 tons CO_2 equivalent emissions (CO_2e) per twelve (12) consecutive month period, any single HAP to less than five (5) tons per twelve (12) consecutive month period, and total HAPs to less than twelve and five tenths (12.5) tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit from all of its emission units of SO2 and NOx of less than 50 tons per twelve (12) consecutive month period, of greenhouse gases of less than 50,000 tons CO_2 equivalent emissions (CO_2e) per twelve (12) consecutive month period, of any single HAP of less than five (5) tons per twelve (12) consecutive month period, and of total HAPs of less than twelve and five tenths (12.5) tons per twelve (12) consecutive month period.

(4) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), 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 33.30 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 no more than 47 tons of VOC emissions emitted per twelve (12) consecutive months. This is a Title I change.*

(B) Liquid binders used in the production of cold mix asphalt shall be defined as follows:

(i) <u>Cut back asphalt rapid cure</u>, 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 an existing requirement for this source.*

(ii) <u>Cut back asphalt medium cure</u>, 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 an existing requirement for this source.*

(iii) <u>Cut back asphalt slow cure</u>, 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 an existing requirement for this source.*

(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 an existing requirement for this source.*

(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 an existing requirement for this source.*

(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 35.05 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 50 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*

(ii) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 47.57 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 68 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*

(iii) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 133.20 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 190 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*

(iv) The amount of VOC solvent used in emulsified asphalt shall not exceed 71.77 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 102 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*

(v) The amount of VOC solvent used in all other asphalt shall not exceed 1,332.02 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 1,900 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*

(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 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* Adjustment Ratio
Cutback Asphalt Rapid Cure	1.053	1
Cutback Asphalt Medium Cure	1.429	1.36
Cutback Asphalt Slow Cure	4.000	3.8
Emulsified Asphalt	2.155	2.04
Other Asphalt	40.0	38

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)), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Note: The source has opted to continue to limit source-wide potential to emit VOCs to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit from all of its emission units of less than 50 tons per twelve (12) consecutive month period.

(b) PSD Minor Source

This existing source is not a major portable 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 CO_2 equivalent emissions (CO_2e) 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 600,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) PM emissions from the dryer/mixer shall not exceed 0.306 pounds per ton of asphalt processed. *This is a Title I change*.

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.

Note: The source has opted to continue to limit source-wide potential to emit PM to less than 125 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit from all of its emission units of less than 125 tons per twelve (12) consecutive month period.

(c) Emission Offset Minor Status
All counties in Indiana have been classified as attainment or unclassifiable in Indiana for all criteria pollutants, except PM2.5. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply and are not included in the permit.

(d) Nonattainment New Source Review
This existing portable source is not a major source, under 326 IAC 2-1.1-5 (Nonattainment New Source Review), because the potential to emit particulate matter with a diameter less than two and five tenths (2.5) micrometers (PM2.5), is limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-1.1-5 (Nonattainment New Source Review) do not apply to this source, and are not included in the permit.

Note: The source has opted to limit source-wide potential to emit PM2.5 to less than 50 tons per twelve (12) consecutive month period. This would allow for the co-location of an additional asphalt plant to the same location, as long as the co-located plant also has a limited potential to emit PM2.5 from all of its emission units of less than 50 tons per twelve (12) consecutive month period. See the "FESOP Status" Section above. *This is a Title I change*.

Federal Rule Applicability

New Source Performance Standards (NSPS)

(a) 40 CFR 60, Subpart I - Standards for Hot-mix Asphalt Facilities
The existing portable drum-mix, hot-mix asphalt plant, constructed in 1998, 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) 1.16 MMBtu/hr hot oil heater, identified as EU-02, because it has a maximum design heat input capacity of less than the applicability threshold of ten (10) MMBtu/hr.

(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 existing storage tanks EU-03 and EU-04, because although each tank was constructed in 1998, after the rule applicability date of July 23, 1984, and each tank has a maximum storage capacity greater than seventy-five cubic meters (75 m^3) (19,813 gallons) but less than 151 m^3 (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 existing storage tank EU-05, because although the tank was constructed in 1998, after the rule applicability date of July 23, 1984, the tank has a maximum storage capacity of less than seventy-five cubic meters (75 m^3) (19,813 gallons), and the liquid stored in the tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).

Note: The following terms and conditions from previous approvals have been revised in this FESOP Renewal:

The existing storage tanks, identified as EU-03 through EU-05, each, are no longer subject to the recordkeeping requirements of 40 CFR 60.116b (a) and (b), through 326 IAC 12, due to revisions to State Rule, 326 IAC 1-1-3 (References to the Code of Federal Regulations). *This is a Title I change.*

(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 portable 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 portable 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 portable 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
The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (326 IAC 12), are not included in the permit, since this existing source still does not include any stationary compression ignition (CI) internal combustion engine(s) (ICE), as defined in 40 CFR 60.4219.

(h) 40 CFR 60, Subpart JJJJ - NSPS for Stationary Spark Ignition Internal Combustion Engines
The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (326 IAC 12), are not included in the permit, since this existing source still does not include any stationary compression ignition (CI) internal combustion engine(s) (ICE), as defined in 40 CFR 60.4248.

(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 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.

(b) 40 CFR 63, Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines
The requirements of the New Source Performance Standard for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ (326 IAC 20-82), are not included in the permit, since this existing source still does not include any stationary compression ignition (CI) internal combustion engine(s) (ICE), as defined in 40 CFR 63.6675.

(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 portable 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 CCCCCC - 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 CCCCCC (6C) (326 IAC 20), are not included in the permit, since the fuel transfer and dispensing operation is only used to handle petroleum fuels, other than gasoline.

(e) 40 CFR 63, Subpart JJJJJJ - 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 JJJJJJ (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 JJJJJJ (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.

(f) 40 CFR 63, Subpart AAAAAAA - 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 AAAAAAA (7A) (326 IAC 20), are not included in the permit, because although the portable 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)
Any person responsible for operating any facility required to obtain a permit under the Federally Enforceable State Operating Permit (FESOP) Program, 326 IAC 2-8, shall prepare and maintain a preventive maintenance plan in accordance with 326 IAC 1-6-3(a), whenever a control device is required for compliance with any applicable emission limitations and/or air pollution control regulations. The drum drying/mixing process still requires the use of a control device to limit the

particulate emissions of PM, PM10 and PM2.5 to less than PSD and TV thresholds. Therefore a PMP is still required for these units and their associated control devices. T*his is an existing requirement for this source.*

(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 still specifically exempted under 326 IAC 1-7-5(c).

(c) 326 IAC 2-1.1-5 (Nonattainment New Source Review)
Nonattainment New Source Review applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.

(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)
Emission Offset applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.

(f) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The 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 portable source is still authorized to relocate to Lake, Porter, or LaPorte Counties, and has actual emissions of NOx greater than or equal to twenty-five (25) tons per year. Therefore, an emission statement covering the previous calendar year must still be submitted by July 1 of each year, when the source is operating in Lake, Porter, or LaPorte Counties. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4. Moreover, the source is subject to additional information requests as provided for in 326 IAC 2-6-5. T*his is an existing requirement for this source.*

(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 portable source is still authorized to relocate to all areas of the state except for any area designated as extreme, severe, or serious nonattainment for any National Ambient Air Quality Standard (NAAQS). Therefore, 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 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, when the source is located in any County except Lake, or the areas specified in (2)(a) through (g). T*his is a new requirement for this source. This is a Title I change.*

(2) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in the following areas listed in 326 IAC 5-1-1(c): T*his is a revised requirement for this source.*

(A) Clark County (Jefferson Township - Cities of Jeffersonville, Clarksville, and Oak Park);

(B) Dearborn County (Lawrenceburg Township - Cities of Lawrenceburg and Greendale);

(C) Dubois County (Bainbridge Township - the City of Jasper);

(D) Marion County (except the area of Washington Township east of Fall Creek and the area of Franklin Township south of Thompson Road and east of Five Points Road);

(E) St. Joseph County (the area north of Kern Road and east of Pine Road);

(F) Vanderburgh County (the area included in the City of Evansville and Pigeon Township); and

(G) Vigo County (Indiana State University campus, 0.5 km radius around UTM Easting 464,519.00, Northing 4,369,208.00, Zone 16.

(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in Lake County. T*his is a new requirement for this source. This is a Title I change.*

(4) 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, when the source is located in any County.

(j) <u>326 IAC 6-4 (Fugitive Dust Emissions Limitations)</u>
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 crushing, 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) <u>326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)</u>
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 crushing, 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 Pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall continue to be controlled according to the Fugitive Dust Control Plan, included as Attachment A to the permit, when operating in the areas described in 326 IAC 6-5-1(a). T*his is a revised requirement for this source.*

(l) <u>326 IAC 6.8-8 (Lake County: Continuous Compliance Plan)</u>
This existing portable source is still authorized to relocate to Lake County, is not specifically listed in 326 IAC 6.8-8(1) through (17), does not have any boilers with a heat input capacity greater than 25 MMBtu/hr, and the uncontrolled, unlimited, PM and PM10 emissions are each still greater than 100

tons per year. Therefore, this source shall submit a continuous compliance plant to IDEM, OAQ and maintain a copy of the Continuous Compliance Plan (CCP) on-site. The Permittee shall perform the inspections, monitoring, and record keeping requirements as specified in 326 IAC 6.8-8-7. The Permittee shall update the CCP (as needed), retain a copy on site, and make the updated CCP available for inspection as specified in 326 IAC 6.8-8-8. T*his is a new requirement for this source. This is a Title I change.*

(m) 326 IAC 6.8-10 (Lake County Fugitive Particulate Matter)
This existing portable source is still authorized to relocate to Lake County, and the systems for screening, handling, storing, and weighing hot aggregate, and the unpaved roads, combined, still have the potential to emit fugitive particulate matter (PM) greater than five (5) tons per year into the atmosphere. Therefore, pursuant to 326 IAC 6.8-10-3, the particulate matter emissions from source wide activities shall meet the following requirements, whenever the source is operating in Lake County: T*his is a new requirement for this source. This is a Title I change.*

(1) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).

(2) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).

(3) The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

(4) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.

(5) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.

(6) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.

(7) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).

(8) Material processing facilities shall include the following:

(A) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.

(B) The PM10 emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(C) The PM10 stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(D) The opacity of fugitive particulate emissions from the material processing facilities, except a crusher at which a capture system is not used, shall not exceed ten percent (10%) opacity.

(E) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).

Note: Material processing facilities include crushers, screens, grinders, mixers, dryers, belt conveyors, bucket elevators, bagging operations, storage bins, and truck or railroad car loading stations.

(9) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).

(10) Material transfer limits shall be as follows:

(A) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

(B) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average.

(11) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the Fugitive Dust Control Plan, which is included as Attachment A to the permit.

(n) 326 IAC 6.8-11 (Lake County: Particulate Matter Contingency Measures)
This existing portable source is still authorized to relocate to Lake County, although it is not specifically listed in 326 IAC 6.8-2, it consists of sources of fugitive particulate emissions to which 326 IAC 6.8-10-1(a) applies, and has the potential to emit PM10 equal to or greater than 10 tons per year; therefore, the source shall comply with 326 IAC 6.8-11-2 through 326 IAC 6.8-11-6, when operating in Lake County. T*his is a new requirement for this source. This is a Title I change.*

(p) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

(q) 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 continues to be subject to 40 CFR 60, Subpart I (Standards of Performance for Hot-mix Asphalt Facilities), which is 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 6.5 (PM Limitations Except Lake County)
The potential to emit particulate matter (PM) before controls for the entire source is greater than one hundred (100) tons per year, and this existing portable hot-mix asphalt plant is authorized to relocate to Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties. Therefore, pursuant to 6.5-1-2(a), PM emissions from the dryer/mixer shall continue to not exceed

seven hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) when located in Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties. T*his is a revised requirement for this source.*

This limitation is more stringent than the applicable requirement of four hundredths (0.04) grains per dry standard cubic foot established by 326 IAC 12 (New Source Performance Standards) (40 CFR 60, Subpart I Standards of Performance for Hot Mix Asphalt Facilities). Therefore, compliance with 326 IAC 6.5-1-2(a) will satisfy the grain loading limitation specified in 326 IAC 12 and 40 CFR 60, Subpart I. This existing source will continue to comply by using a baghouse, to limit PM emissions to less than three hundredths (0.03) gr/dscf when located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties.

See Appendix A for the detailed calculations.

(d) 326 IAC 6.8 (Particulate Matter Limitations for Lake County)
The potential to emit particulate matter (PM) before controls for the entire source is greater than one hundred (100) tons per year, and this existing portable hot-mix asphalt plant is authorized to relocate to Lake County. Therefore, pursuant to 6.8-1-2(a), PM emissions from the hot oil heater shall not exceed seven hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) when located in Lake County. T*his is a revised requirement for this source.*

This limitation is more stringent than the applicable requirement of four hundredths (0.04) grains per dry standard cubic foot established by 326 IAC 12 (New Source Performance Standards) (40 CFR 60, Subpart I Standards of Performance for Hot Mix Asphalt Facilities). Therefore, compliance with 326 IAC 6.8-1-2(a) will satisfy the grain loading limitation specified in 326 IAC 12 and 40 CFR 60, Subpart I. This existing source will continue to comply by using a baghouse, to limit PM emissions to less than three hundredths (0.03) gr/dscf when located in Lake County.

See Appendix A for the detailed calculations.

(e) 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 162.98 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 is considered distillate oil and waste oil is considered residual oil.

(f) 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.

(g) 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 limit the 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.

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 600,000 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. *This is a new requirement for this source. This is a Title I change.*

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 Appendix A for the detailed calculations.

(h) 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.

(i) There are no other 326 IAC 8 Rules that are applicable to the portable drum-mix, hot-mix asphalt plant.

(j) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
This existing portable, 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.

(k) 326 IAC 10-1 (Nitrogen Oxides Control in Clark and Floyd Counties
This existing portable, drum hot-mix asphalt plant, authorized to relocate to Clark and Floyd counties, was constructed in 1998, after the effective date of May 13, 1996. However, the source was issued a FESOP limiting potential and actual NOx emissions to less than one hundred (100) tons per year, and is subject to the requirements of 40 CFR 60, Subpart I. Therefore, the requirements of 326 IAC 10-1 do not apply, and are not included in the permit.

(l) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The existing 47.25 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.

(m) 326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))
The existing 47.25 MMBtu/hr dryer burner still does not meet the definition of an affected facility, as defined in 326 IAC 10-5-2(1), because it is still an external combustion unit and not an internal combustion engine.

Hot Oil Heating System

(a) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The one (1) existing hot oil heater, constructed in 1998 and having a maximum rated heat input capacity of 1.16 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 not exceed six tenths (0.6) pounds per MMBtu heat input. *This is a new requirement for this source. This is a Title I change.*

Based on Appendix A and AP-42, the potential PM emission rate is 1.9 pounds per million cubic feet of natural gas, or 0.0019 pounds per million British thermal units. Therefore, the hot oil heater can comply with this limit.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The existing hot oil heater is still not subject to the requirements of 326 IAC 6-3 because it is already otherwise subject to the more stringent particulate limits established in 326 IAC 6-2.

(c) 326 IAC 6.5 (PM Limitations Except Lake County)
The potential to emit particulate matter (PM) before controls for the entire source is greater than one hundred (100) tons per year, and this existing portable hot-mix asphalt plant is authorized to relocate to Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties. Therefore, pursuant to 6.5-1-2(a), PM emissions from the hot oil heater shall not exceed seven hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) when located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties.

(d) 326 IAC 6.8 (Particulate Matter Limitations for Lake County)
The potential to emit particulate matter (PM) before controls for the entire source is greater than one hundred (100) tons per year, and this existing portable hot-mix asphalt plant is authorized to relocate to Lake County. Therefore, pursuant to 6.8-1-2(a), PM emissions from the hot oil heater shall not exceed seven hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)) when located in Lake County.

(e) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The unlimited potential to emit SO2 from the existing hot oil heater is still less than twenty-five (25) tons/year, or 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 for the detailed calculations.

(d) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
The 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 existing 1.16 MMBtu/hr 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.

(f) 326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))
The existing 1.16 MMBtu/hr hot oil heater still does not meet the definition of an affected facility, as defined in 326 IAC 10-5-2(1), because it is still an external combustion unit and not an internal combustion engine.

Cold-Mix Asphalt Production Operation

(a) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit of HAPs from the inclusion of additional cold-mix emulsions to the cold-mix asphalt production operation is greater than ten (10) tons per year for any single HAP and/or greater than twenty-five (25) tons per year of a combination of HAPs. However, the source shall continue to limit the potential to emit of HAPs from the cold-mix asphalt production operation 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 proposed revision is not subject to the requirements of 326 IAC 2-4.1. See the "PTE of the Entire Source after Issuance of the FESOP Revision" Section above.

See Appendix A.1 for the detailed calculations.

(b) 326 IAC 6.5 (PM Limitations Except Lake County)
The existing cold-mix (cutback) production operation still does not have the potential to emit particulate matter (PM). Therefore, the requirements of 326 IAC 6.5 (PM Limitations Except Lake County) still do not apply and are not included in the permit.

(c) 326 IAC 6.8 (Particulate Matter Limitations for Lake County)
The existing cold-mix (cutback) production operation still does not have the potential to emit particulate matter (PM). Therefore, the requirements of 326 IAC 6.8 (PM Limitations for Lake County) still do not apply and are not included in the permit.

(d) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The existing cold-mix asphalt production operation, a continued source of potential VOC emissions greater than twenty-five (25) tons per year, 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 and are not included in the permit.

See Appendix A for the detailed calculations.

(e) 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.

(f) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The existing cold-mix asphalt production operation, a continued source of potential VOC emissions greater than one hundred (100) tons per year, is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving). Additionally, this source elected to limit their VOC emissions to less than one hundred (100) tons per year. 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 for the detailed calculations.

(g) 326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)
This existing portable source is authorized to relocate to all areas of the state except for Lake, Porter, and/or LaPorte County counties, or in any area that is designated as extreme, severe, or serious nonattainment for any National Ambient Air Quality Standard. Additionally, the PTE VOC emissions from the entire source are limited to less than one hundred (100) tons per year, under 326 IAC 2-8. Therefore, the requirements of 326 IAC 8-7 still do not apply and are not included in the permit.

See Appendix A.1 for the detailed calculations.

(h) 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 the existing liquid asphalt storage tank, identified as EU-03, waste oil storage tank, identified as EU-04, and No. 2 fuel oil storage tank, identified as EU-05, 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 for the detailed calculations.

(b) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The existing liquid asphalt storage tank, identified as EU-03, waste oil storage tank, identified as EU-04, and No. 2 fuel oil storage tank, identified as EU-05, 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 portable source is currently located in Decatur County and the existing liquid asphalt storage tank, identified as EU-03, waste oil storage tank, identified as EU-04, and No. 2 fuel oil storage tank, identified as EU-05, each continue to have a capacity of less than thirty-nine thousand (39,000) gallons. However, this portable source is still authorized to relocate to Clark or Floyd Counties. Therefore, pursuant to 326 IAC 8-9-1(b), the existing storage tanks (EU-03 through EU-05) are each subject to reporting and recordkeeping provisions of section 6(a) and 6(b) of this rule, and are exempt from all other provisions of this rule, whenever the source is located in Clark or Floyd Counties.

(1) Pursuant to 326 IAC 8-9-6(b), the Permittee shall continue to maintain a record and submit to IDEM, OAQ a report containing the following information for each of the storage tanks (EU-03 through EU-05) when the source is located in Clark, or Floyd Counties.

(A) the tank identification number;

(B) the tank dimensions; and

(C) the tank capacity.

(2) Pursuant to 326 IAC 8-9-6(a), these records shall be maintained for the life of the tank.

(d) There are no other 326 IAC 8 Rules that are applicable to the existing storage tanks.

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.

The compliance determination, testing, monitoring, recordkeeping, and reporting requirements applicable to this source are as follows:

Compliance Determination & Testing Requirements

(a) The existing dryer/mixer continues to have applicable compliance determination requirements as specified below:

(1) In order to comply with the PM, PM10, and PM2.5 limitations in the permit, the cyclone collector and 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.

(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, NOx, VOC, and CO emission limitations, and the BACT avoidance VOC emission limitation.

(3) The slag and fuel characteristics (i.e., sulfur content) and usage rates will be used to verify compliance with the SO2, NOx, and greenhouse gas emission limitations.

(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.

Note: The following terms and conditions from previous approvals have been revised in this FESOP Renewal:

- The used oil requirements (326 IAC 13-8) are not included in the permit, because they are regulated by another agency. *This is a Title I change.*

(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.

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, 326 IAC 2-8 (FESOP), 326 IAC 6.5 (Particulate Matter Limitations Except Lake County), and 326 IAC 6.8 (Particulate Matter Limitations for Lake County). The last valid dryer/mixer stack test for PM and PM10 occurred on September 27, 2004.

Based on a comparison with recent test results from similar sources, IDEM has determined that the source would have complied with their PM2.5 limit at that time. Therefore, PM2.5 testing shall be conducted in concurrence with the next PM/PM10 test.

(2) 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. *This is a Title I change.*

Compliance Monitoring Requirements

The existing drum mixer and dryer baghouse stack exhaust, and the material processing and handling, 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 (SV-1)	Visible Emissions	Once per day	normal/abnormal	Response Steps
	Pressure Drop	Once per day	2.0 to 8.0 inches	Response Steps
	Bags in baghouse	As needed	normal/abnormal	Response Steps
Cyclone collector	Failure Detection	As needed	normal/abnormal	Response Steps
Conveyors, screens, and material transfer points	Visible Emissions	Once per day	normal/abnormal	Response Steps

These monitoring conditions are necessary because the cyclone collector and baghouse used in conjunction with the hot-mix dryer/mixer must operate properly to ensure continued compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP), 326 IAC 6.5 (Particulate Matter Limitations Except Lake County), and 326 IAC 6.8 (Particulate Matter Limitations for Lake County), and the limits that render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-2 (PSD), 326 IAC 2-3 (Emission Offset), and 326 IAC 2-1.1-5 (Nonattainment New Source Review) not applicable.

Note: The following terms and conditions from previous approvals have been revised in this FESOP Renewal:

The source will no longer be required to monitor and maintain the inlet temperature to the baghouse within a range of 200-400 degrees Fahrenheit to prevent overheating of the bags and to prevent low temperatures from mudding up the bags.

IDEM has determined that there is no process at this facility where temperature has an appreciable impact on the emission control equipment. The inlet temperature of the baghouse unit would merely measure the ambient temperature of the facility (ambient outdoor temperature). The temperature could vary by 14-20 degrees from winter to summer. Therefore, temperature is not an acceptable or meaningful parameter to observe at this facility.

Conversely, pressure drop is an indicator of a variety of conditions within the baghouse. Monitoring pressure drop can alert the operator to relative changes (such as dust cake resistance) over a period of time. The operator can use this information to chart trends and determine if the unit is operating within the optimal range as determined by baseline testing of the unit and manufacturer's specifications. Any deviations from the normal operational range of the unit, whether gradual or sudden, should alert the operator that the unit needs maintenance. Both gradual and sudden changes in the pressure drop could result in damage to the bags in the baghouse if not properly addressed. Therefore, IDEM has determined that monitoring the baghouse pressure drop is a better indicator of baghouse health. *This is a Title I change.*

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 April 5, 2012.

The operation of this source shall be subject to the conditions of the attached proposed FESOP Renewal F031-31702-03258. The staff recommends to the Commissioner that this FESOP Renewal 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) 234-5374 or toll free at 1-800-451-6027 extension 4-5374.

(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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Asphalt Plant Maximum Capacity - Drum Mix

Maximum Hourly Asphalt Production =	325	ton/hr								
Maximum Annual Asphalt Production =	2,847,000	ton/yr								
Maximum Annual Blast Furnace Slag Usage =	1,195,740	ton/yr	1.50	% sulfur						
Maximum Annual Steel Slag Usage =	1,195,740	ton/yr	0.66	% sulfur						
Maximum Dryer Fuel Input Rate =	47.25	MMBtu/hr								
Natural Gas Usage =	414	MMCF/yr								
No. 2 Fuel Oil Usage =	2,956,500	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	0	gal/yr, and	0	% 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 =	2,956,500	gal/yr, and	0.75	% sulfur	1.00	% ash	0.200	% chlorine,	0.010	% lead
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr,and								
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0	% 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

	Unlimited/Uncontrolled Potential to Emit (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**CO_2e**	**Total HAPs**	**Worst Case HAP**	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	94.61	75.39	75.39	162.98	29.57	1.48	17.38	33,410.19	21.19	19.51	(hydrogen chloride)
Dryer/Mixer (Process)	39,858.00	9,252.75	2,135.25	82.56	78.29	45.55	185.06	47,334.22	15.17	4.41	(formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	442.42	0	0	0	0.00	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	0.07	0.12	0.12	2.58	0.73	0.01	0.18	1,016.16	0.003	0.002	(hexane)
Diesel-Fired Generator < 600 HP	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions*	**39,858.07**	**9,252.87**	**2,135.37**	**607.98**	**79.02**	**45.56**	**185.24**	**48,350.38**	**21.19**	**19.51**	(hydrogen chloride)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	1.58	1.58	1.58	0	0	24.38	4.10	0	0.41	0.13	(formaldehyde)
Material Storage Piles	0.93	0.33	0.33	0	0	0	0	0	0	0	
Material Processing and Handling	9.20	4.35	0.66	0	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	37.87	13.25	13.25	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	101.05	25.75	2.58	0	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	34,213.82	0	0	8,924.23	3,079.24	(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	**150.62**	**45.26**	**18.39**	**0.00**	**0.00**	**34,238.21**	**4.10**	**0.00**	**8,924.64**	**3,079.24**	(xylenes)
Totals Unlimited/Uncontrolled PTE	**40,008.69**	**9,298.13**	**2,153.76**	**607.98**	**79.02**	**34,283.77**	**189.34**	**48,350.38**	**8,945.83**	**3,079.24**	(xylenes)

negl = negligible
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	47.25	MMBtu/hr								
Natural Gas Usage =	414	MMCF/yr								
No. 2 Fuel Oil Usage =	2,956,500	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	0	gal/yr, and	0	% 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 =	2,956,500	gal/yr, and	0.75	% sulfur	1.00	% ash	0.200	% chlorine,	0.010	% lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)							
Criteria Pollutant	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)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	64.0	0.39	2.96	0.00	0.00	0.000	0.000	94.61	**94.61**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	51	1.57	4.88	0.00	0.00	0.000	0.000	75.39	**75.39**
SO2	0.6	71.0	0.0	0.0	0.000	0.000	110.3	0.12	104.96	0.00	0.00	0.000	0.000	162.98	**162.98**
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	20.70	29.57	0.00	0.00	0.00	0.00	28.09	**29.57**
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	1.14	0.30	0.00	0.00	0.00	0.00	1.48	**1.48**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	17.38422	7.39	0.00	0.00	0.00	0.00	7.39	**17.38**
Hazardous Air Pollutant															
HCl							13.2							19.51	**19.51**
Antimony			5.25E-03	5.25E-03			negl			0.00E+00	0.00E+00			negl	**0.0E+00**
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	4.1E-05	8.28E-04	0.00E+00	0.00E+00			1.63E-01	**1.6E-01**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	2.5E-06	6.21E-04	0.00E+00	0.00E+00			negl	**6.2E-04**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	2.3E-04	6.21E-04	0.00E+00	0.00E+00			1.37E-02	**1.4E-02**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	2.9E-04	6.21E-04	0.00E+00	0.00E+00			2.96E-02	**3.0E-02**
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	1.7E-05		0.00E+00	0.00E+00			3.10E-04	**3.1E-04**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	1.0E-04	1.86E-03	0.00E+00	0.00E+00			8.1E-01	**0.81**
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	7.9E-05	1.24E-03	0.00E+00	0.00E+00			1.01E-01	**0.10**
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				5.4E-05	6.21E-04	0.00E+00	0.00E+00				**6.2E-04**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	4.3E-04	6.21E-04	0.00E+00	0.00E+00			1.63E-02	**0.016**
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	5.0E-06	3.10E-03	0.00E+00	0.00E+00			negl	**3.1E-03**
1.1.1-Trichloroethane			2.36E-04	2.36E-04						0.00E+00	0.00E+00				**0.0E+00**
1,3-Butadiene															**0.0E+00**
Acetaldehyde															**0.0E+00**
Acrolein															**0.0E+00**
Benzene	2.1E-03		2.14E-04	2.14E-04				4.3E-04		0.00E+00	0.00E+00				**4.3E-04**
Bis(2-ethylhexyl)phthalate							2.2E-03							3.25E-03	**3.3E-03**
Dichlorobenzene	1.2E-03						8.0E-07	2.5E-04						1.18E-06	**2.5E-04**
Ethylbenzene			6.36E-05	6.36E-05						0.00E+00	0.00E+00				**0.0E+00**
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				1.6E-02	9.02E-02	0.00E+00	0.00E+00				**0.090**
Hexane	1.8E+00							0.37							**0.373**
Phenol							2.4E-03							3.55E-03	**3.5E-03**
Toluene	3.4E-03		6.20E-03	6.20E-03				7.0E-04		0.00E+00	0.00E+00				**7.0E-04**
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		0.00E+00	0.00E+00			5.78E-02	**5.8E-02**
Polycyclic Organic Matter		3.30E-03							4.88E-03						**4.9E-03**
Xylene			1.09E-04	1.09E-04						0.00E+00	0.00E+00				**0.0E+00**
							Total HAPs	**0.39**	**0.11**	**0.00**	**0.00**	**0**	**0**	**20.71**	**21.19**

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

*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.

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 the
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	47.25	MMBtu/hr								
Natural Gas Usage =	414	MMCF/yr								
No. 2 Fuel Oil Usage =	2,956,500	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Usage =	0	gal/yr, and	0	% 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 =	2,956,500	gal/yr, and	0.75	% sulfur	1.00	% ash	0.200	% chlorine,	0.010	% lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)						
CO2e Fraction	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)
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.89
N2O	2.2	0.26	0.19	0.53	0.9	0.9	0.18

Global Warming Potentials (GWP)		
Name	Chemical Formula	Global warming potential
Carbon dioxide	CO_2	1
Methane	CH_4	21
Nitrous oxide	N_2O	310

	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
CO2e Fraction	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	24,868.09	33,262.71	0.00	0.00	0.00	0.00	32,557.21
CH4	0.52	1.35	0.00	0.00	0.00	0.00	1.32
N2O	0.46	0.38	0.00	0.00	0.00	0.00	0.27
Total	24,869.07	33,264.44	0.00	0.00	0.00	0.00	32,558.79
CO2e Equivalent Emissions (tons/yr)	25,020.07	33,410.19	0.00	0.00	0.00	0.00	32,667.41

CO2e for Worst Case Fuel* (tons/yr)
33,410.19

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.
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) Fue 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 Oil: 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).

Abbreviations
PTE = Potential to Emit
CO2 = Carbon Dioxide
CH4 = Methane
N2O = Nitrogen Dioxide

Appendix A.1: Unlimited Emissions Calculations
Dryer/Mixer Process Emissions

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	325	ton/hr
Maximum Annual Asphalt Production =	2,847,000	ton/yr

	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	28	28	28	39,858.0	39,858.0	39,858.0	**39,858.0**
PM10*	6.5	6.5	6.5	9,252.8	9,252.8	9,252.8	**9,252.8**
PM2.5*	1.5	1.5	1.5	2,135.3	2,135.3	2,135.3	**2,135.3**
SO2**	0.0034	0.011	0.058	4.8	15.7	82.6	**82.6**
NOx**	0.026	0.055	0.055	37.0	78.3	78.3	**78.3**
VOC**	0.032	0.032	0.032	45.6	45.6	45.6	**45.6**
CO***	0.13	0.13	0.13	185.1	185.1	185.1	**185.1**
Hazardous Air Pollutant							
HCl			2.10E-04			2.99E-01	**0.30**
Antimony	1.80E-07	1.80E-07	1.80E-07	2.56E-04	2.56E-04	2.56E-04	**2.56E-04**
Arsenic	5.60E-07	5.60E-07	5.60E-07	7.97E-04	7.97E-04	7.97E-04	**7.97E-04**
Beryllium	negl	negl	negl	negl	negl	negl	**0.00E+00**
Cadmium	4.10E-07	4.10E-07	4.10E-07	5.84E-04	5.84E-04	5.84E-04	**5.84E-04**
Chromium	5.50E-06	5.50E-06	5.50E-06	7.83E-03	7.83E-03	7.83E-03	**7.83E-03**
Cobalt	2.60E-08	2.60E-08	2.60E-08	3.70E-05	3.70E-05	3.70E-05	**3.70E-05**
Lead	6.20E-07	1.50E-05	1.50E-05	8.83E-04	2.14E-02	2.14E-02	**2.14E-02**
Manganese	7.70E-06	7.70E-06	7.70E-06	1.10E-02	1.10E-02	1.10E-02	**1.10E-02**
Mercury	2.40E-07	2.60E-06	2.60E-06	3.42E-04	3.70E-03	3.70E-03	**3.70E-03**
Nickel	6.30E-05	6.30E-05	6.30E-05	0.09	0.09	0.09	**0.09**
Selenium	3.50E-07	3.50E-07	3.50E-07	4.98E-04	4.98E-04	4.98E-04	**4.98E-04**
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.06	0.06	0.06	**0.06**
Acetaldehyde			1.30E-03			1.85	**1.85**
Acrolein			2.60E-05			3.70E-02	**3.70E-02**
Benzene	3.90E-04	3.90E-04	3.90E-04	0.56	0.56	0.56	**0.56**
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.34	0.34	0.34	**0.34**
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	4.41	4.41	4.41	**4.41**
Hexane	9.20E-04	9.20E-04	9.20E-04	1.31	1.31	1.31	**1.31**
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.07	0.07	0.07	**0.07**
MEK			2.00E-05			0.03	**0.03**
Propionaldehyde			1.30E-04			0.19	**0.19**
Quinone			1.60E-04			0.23	**0.23**
Toluene	1.50E-04	2.90E-03	2.90E-03	0.21	4.13	4.13	**4.13**
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.27	1.25	1.25	**1.25**
Xylene	2.00E-04	2.00E-04	2.00E-04	0.28	0.28	0.28	**0.28**
						Total HAPs	**15.17**
						Worst Single HAP	**4.41** **(formaldehyde)**

Methodology
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	325	ton/hr
Maximum Annual Asphalt Production =	2,847,000	ton/yr

	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)				Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Global Warming Potentials (GWP)	Natural Gas	No. 2 Fuel Oil	Waste Oil	**CO2e for Worst Case Fuel (tons/yr)**
CO2	33	33	33	1	46,975.50	46,975.50	46,975.50	**47,334.22**
CH4	0.0120	0.0120	0.0120	21	17.08	17.08	17.08	
N2O				310	0	0	0	
				Total	46,992.58	46,992.58	46,992.58	
				CO2e Equivalent Emissions (tons/yr)	47,334.22	47,334.22	47,334.22	

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 N20 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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	1,195,740	ton/yr	1.50	% sulfur
Maximum Annual Steel Slag Usage =	1,195,740	ton/yr	0.66	% sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	442.42
Steel Slag**	0.0014	0.84

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
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Paul H. Rohe Company, Inc.
Source Location: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	1.16	MMBtu/hr		
Natural Gas Usage =	0	MMCF/yr		
No. 2 Fuel Oil Usage =	72,583	gal/yr, and	0.50	% sulfur

Unlimited/Uncontrolled Emissions

	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
	Hot Oil Heater		Hot Oil Heater		
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	0.000	0.073	**0.07**
PM10/PM2.5	7.6	3.3	0.000	0.120	**0.12**
SO2	0.6	71.0	0.000	2.577	**2.58**
NOx	100	20.0	0.000	0.726	**0.73**
VOC	5.5	0.20	0.000	0.007	**0.01**
CO	84	5.0	0.000	0.181	**0.18**
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	0.0E+00	2.03E-05	**2.0E-05**
Beryllium	1.2E-05	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Cadmium	1.1E-03	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Chromium	1.4E-03	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Cobalt	8.4E-05		0.0E+00		**0.0E+00**
Lead	5.0E-04	1.3E-03	0.0E+00	4.57E-05	**4.6E-05**
Manganese	3.8E-04	8.4E-04	0.0E+00	3.05E-05	**3.0E-05**
Mercury	2.6E-04	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Nickel	2.1E-03	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Selenium	2.4E-05	2.1E-03	0.0E+00	7.62E-05	**7.6E-05**
Benzene	2.1E-03		0.0E+00		**0.0E+00**
Dichlorobenzene	1.2E-03		0.0E+00		**0.0E+00**
Ethylbenzene					**0.0E+00**
Formaldehyde	7.5E-02	6.10E-02	0.0E+00	2.21E-03	**2.2E-03**
Hexane	1.8E+00		0.0E+00		**0.0E+00**
Phenol					**0.0E+00**
Toluene	3.4E-03		0.0E+00		**0.0E+00**
Total PAH Haps	negl		negl		**0.0E+00**
Polycyclic Organic Matter		3.30E-03		1.20E-04	**1.2E-04**
		Total HAPs =	**0.0E+00**	**2.6E-03**	**0.003**
		Worst Single HAP =	**0.0E+00 (Hexane)**	**2.2E-03 (Formaldehyde)**	**2.2E-03 (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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	1.16	MMBtu/hr		
Natural Gas Usage =	0	MMCF/yr		
No. 2 Fuel Oil Usage =	72,583	gal/yr,	0.50	% sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Natural Gas (lb/MMCF)	Emission Factor (units) No. 2 Fuel Oil (lb/kgal)	Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr)	Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr)
CO2	120,161.84	22,501.41	1	0.00	816.61
CH4	2.49	0.91	21	0.00	0.03
N2O	2.2	0.26	310	0.00	0.01
				0.00	816.65

Worse Case CO2e Emissions (tons/yr)
820.23

CO2e Equivalent Emissions (tons/yr)	0.00	820.23

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	1.16	MMBtu/hr
Natural Gas Usage =	0	MMCF/yr, and
No. 2 Fuel Oil Usage =	72,583	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	0.00E+00	0.001	**0.001**
CO	8.90E-06	0.0012	0.000	0.044	**0.044**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	0.00	1016.16	**1,016.16**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	0.00E+00	1.27E-04	**1.27E-04**
Acenaphthene		5.30E-07		1.92E-05	**1.92E-05**
Acenaphthylene		2.00E-07		7.26E-06	**7.26E-06**
Anthracene		1.80E-07		6.53E-06	**6.53E-06**
Benzo(b)fluoranthene		1.00E-07		3.63E-06	**3.63E-06**
Fluoranthene		4.40E-08		1.60E-06	**1.60E-06**
Fluorene		3.20E-08		1.16E-06	**1.16E-06**
Naphthalene		1.70E-05		6.17E-04	**6.17E-04**
Phenanthrene		4.90E-06		1.78E-04	**1.78E-04**
Pyrene		3.20E-08		1.16E-06	**1.16E-06**
				Total HAPs	**9.62E-04**
				Worst Single HAP	**6.17E-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 N20 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 - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

	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
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[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, 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]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]	1.28E-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	0.00E+00	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]The 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.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (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[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
Potential Emission in tons/yr	0.00	0.000	0.000

[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, 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]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.

[6]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (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 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 ga/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
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	0
Maximum Diesel Fuel Usage (gal/yr)	0

Sulfur Content (S) of Fuel (% by weight) 0.00

	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

[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) * 1/10^6 (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

[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) * 1/10^6 (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

[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) * 1/10^6 (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 ga/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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	2,847,000	tons/yr

	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
Pollutant	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Total**
Total PM*	5.2E-04	5.9E-04	NA	0.74	0.83	NA	**1.58**
Organic PM	3.4E-04	2.5E-04	NA	0.49	0.361	NA	**0.85**
TOC	0.004	0.012	0.001	5.92	17.35	1.566	**24.8**
CO	0.001	0.001	3.5E-04	1.92	1.680	0.501	**4.10**

NA = Not Applicable (no AP-42 Emission Factor)

PM/HAPs	**0.035**	**0.041**	**0**	**0.075**
VOC/HAPs	**0.087**	**0.221**	**0.023**	**0.331**
non-VOC/HAPs	**4.6E-04**	**4.7E-05**	**1.2E-04**	**6.2E-04**
non-VOC/non-HAPs	**0.43**	**0.25**	**0.11**	**0.79**

Total VOCs	**5.57**	**17.35**	**1.5**	**24.4**
Total HAPs	**0.12**	**0.26**	**0.023**	**0.41**
			Worst Single HAP	**0.126 (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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Organic Particulate-Based Compounds (Table 11.1-15)

					Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
Pollutant	**CASRN**	**Category**	**HAP Type**	**Source**	**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%	1.3E-03	1.7E-03	NA	3.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.4E-04	5.1E-05	NA	1.9E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	3.4E-04	4.7E-04	NA	8.1E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	9.2E-05	2.0E-04	NA	2.9E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	3.7E-05	0	NA	3.7E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.1E-05	0	NA	1.1E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	9.2E-06	0	NA	9.2E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.1E-05	0	NA	1.1E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	3.8E-05	3.4E-05	NA	7.2E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	5.0E-04	7.6E-04	NA	1.3E-03
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	1.8E-06	0	NA	1.8E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	2.4E-04		NA	2.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	3.7E-03	3.7E-03	NA	7.4E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	2.3E-06	0	NA	2.3E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.2E-02	1.9E-02	NA	0.031
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	6.1E-03	6.6E-03	NA	1.3E-02
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.1E-04	1.1E-04	NA	2.2E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	3.9E-03	6.5E-03	NA	1.0E-02
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	7.3E-04	1.6E-03	NA	2.3E-03
Total PAH HAPs							**0.029**	**0.041**	**NA**	**0.069**
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	5.7E-03	0	0	5.7E-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)

					Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
Pollutant	**CASRN**	**Category**	**HAP Type**	**Source**	**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%	**5.57**	**17.35**	**1.47**	**24.38**
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	3.8E-01	4.5E-02	1.0E-01	0.532
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	2.7E-03	9.5E-03	7.2E-04	0.013
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	4.2E-02	1.9E-01	1.1E-02	0.244
Total non-VOC/non-HAPS					7.30%	1.40%	**0.432**	**0.243**	**0.114**	**0.79**
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	3.1E-03	5.6E-03	8.1E-04	9.4E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	5.7E-04	8.5E-04	1.5E-04	1.6E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	2.9E-03	6.8E-03	7.7E-04	1.0E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	7.7E-04	2.8E-03	2.0E-04	3.7E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.2E-05	6.9E-04	3.3E-06	7.1E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	8.9E-04	4.0E-03	2.3E-04	5.1E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	6.5E-03	0	1.7E-03	8.2E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	1.7E-02	6.6E-03	4.4E-03	0.028
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	5.2E-03	1.2E-01	1.4E-03	0.126
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	8.9E-03	1.7E-02	2.3E-03	0.029
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.1E-04	5.4E-05	2.8E-05	1.9E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	4.7E-05	0	4.7E-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%	4.3E-04	9.4E-04	1.1E-04	1.5E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	4.6E-04	0	1.2E-04	5.8E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.2E-02	1.1E-02	3.3E-03	0.026
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	7.7E-05	0	2.0E-05	9.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	2.4E-02	3.5E-02	6.4E-03	0.065
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	4.7E-03	9.9E-03	1.3E-03	1.6E-02
Total volatile organic HAPs					1.50%	1.30%	**0.089**	**0.226**	**0.023**	**0.338**

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
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
MTBE = Methyl tert butyl ether

Appendix A.1: Unlimited Emissions Calculations
Material Storage Piles

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = 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	0.50	0.275	0.096
Limestone	1.6	1.85	1.00	0.338	0.118
RAP	0.5	0.58	1.00	0.106	0.037
Gravel	1.6	1.85	0.50	0.169	0.059
Shingles	0.5	0.58	0.05	0.005	0.002
Slag	3.8	4.40	0.05	0.040	0.014
			Totals	**0.93**	**0.33**

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.
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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.

Ef = k*(0.0032)*[(U/5)^1.3 / (M/2)^1.4]

where: Ef =	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)
Ef (PM) =	2.27E-03	lb PM/ton of material handled
Ef (PM10) =	1.07E-03	lb PM10/ton of material handled
Ef (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	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	3.07	1.45	0.22
Front-end loader dumping of materials into feeder bins	3.07	1.45	0.22
Conveyor dropping material into dryer/mixer or batch tower	3.07	1.45	0.22
Total (tons/yr)	**9.20**	**4.35**	**0.66**

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 additivies
*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	33.81	11.77
Conveying	0.003	0.0011	4.06	1.49
Unlimited Potential to Emit (tons/yr) =			**37.87**	**13.25**

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	tons/yr
Maximum Asphalt Cement/Binder Throughput =	142,350	tons/yr
Maximum No. 2 Fuel Oil Usage =	2,956,500	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	1.2E+05	4.8E+06	300	0.057	6,860.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.2E+05	2.1E+06	300	0.057	6,860.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	4.0E+03	1.9E+05	300	0.057	224.7
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	4.0E+03	4.7E+04	300	0.057	224.7
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	3.1E+02	1.4E+04	300	0.057	17.7
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	3.1E+02	3.7E+03	300	0.057	17.7
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	6.4E+05	1.2E+07	300	0.057	36,588.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	6.4E+05	9.7E+06	300	0.057	36,588.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.2E+05	4.9E+06	300	0.057	6,740.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.2E+05	2.0E+06	300	0.057	6,740.1
	Total				**1.8E+06**	**3.6E+07**			**1.0E+05**

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)	20.91	5.33	0.53	13.75	3.50	0.35	6.87	1.75	0.18
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	20.91	5.33	0.53	13.75	3.50	0.35	6.87	1.75	0.18
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.685	0.174	0.02	0.450	0.115	0.01	0.225	0.057	0.01
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.685	0.174	0.02	0.450	0.115	0.01	0.225	0.057	0.01
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.054	0.014	0.00	0.036	0.009	0.00	0.018	0.005	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.054	0.014	0.00	0.036	0.009	0.00	0.018	0.005	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	111.50	28.42	2.84	73.31	18.68	1.87	36.66	9.34	0.93
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	111.50	28.42	2.84	73.31	18.68	1.87	36.66	9.34	0.93
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	20.54	5.23	0.52	13.50	3.44	0.34	6.75	1.72	0.17
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	20.54	5.23	0.52	13.50	3.44	0.34	6.75	1.72	0.17
	Totals	**307.36**	**78.33**	**7.83**	**202.10**	**51.51**	**5.15**	**101.05**	**25.75**	**2.58**

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	tons/yr
Maximum Asphalt Cement/Binder Throughput =	142,350	tons/yr
Maximum No. 2 Fuel Oil Usage =	2,956,500	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	1.2E+05	4.8E+06	300	0.057	6860.4
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.2E+05	2.1E+06	300	0.057	6860.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.0E+03	1.9E+05	300	0.057	224.7
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.0E+03	4.7E+04	300	0.057	224.7
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	3.1E+02	1.4E+04	300	0.057	17.7
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	3.1E+02	3.7E+03	300	0.057	17.7
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	6.4E+05	1.2E+07	300	0.057	36588.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	6.4E+05	9.7E+06	300	0.057	36588.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.2E+05	4.9E+06	300	0.057	6740.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.2E+05	2.0E+06	300	0.057	6740.1
	Total				**1.8E+06**	**3.6E+07**			**1.0E+05**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef = [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 = Ubitiguous 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, Eext = E * [1 - (p/4N)]
Mitigated Emission Factor, Eext = Ef * [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, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	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)	0.51	0.10	0.03	0.47	0.09	0.02	0.23	0.05	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.51	0.10	0.03	0.47	0.09	0.02	0.23	0.05	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.017	0.003	8.2E-04	0.015	0.003	7.5E-04	0.008	1.5E-03	3.7E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.017	0.003	8.2E-04	0.015	0.003	7.5E-04	0.008	1.5E-03	3.7E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.3E-03	2.6E-04	6.5E-05	1.2E-03	2.4E-04	5.9E-05	6.0E-04	1.2E-04	3.0E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.3E-03	2.6E-04	6.5E-05	1.2E-03	2.4E-04	5.9E-05	6.0E-04	1.2E-04	3.0E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	2.72	0.54	0.13	2.49	0.50	0.12	1.24	0.25	0.06
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	2.72	0.54	0.13	2.49	0.50	0.12	1.24	0.25	0.06
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.50	0.10	0.02	0.46	0.09	0.02	0.23	0.05	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.50	0.10	0.02	0.46	0.09	0.02	0.23	0.05	0.01
	Totals	**7.50**	**1.50**	**0.37**	**6.86**	**1.37**	**0.34**	**3.43**	**0.69**	**0.17**

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Asphalt Cement/Binder Throughput =	142,350	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%	36,014.6	34,213.8
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	40,712.1	28,498.5
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	28,470.0	7,117.5
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	21,352.5	9,907.6
Other asphalt with solvent binder	25.9%	2.5%	36,868.7	921.7
			Worst Case PTE of VOC =	**34,213.8**

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) =	**8,924.23**	
PTE of Single HAP (tons/yr) =	**3,079.24**	**Xylenes**

Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents*

		Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
Volatile Organic HAP	CAS#	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
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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:

Gasoline Throughput =	0	gallons/day
=	0.0	kgal/yr

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Asphalt Plant Limitations - Drum Mi

Maximum Hourly Asphalt Production =	325	ton/hr								
Annual Asphalt Production Limitation =	600,000	ton/yr								
Blast Furnace Slag Usage Limitation =	60,000	ton/yr	1.50	% sulfur						
Steel Slag Usage Limitation =	600,000		0.66	% sulfur						
Maximum Dryer Fuel Input Rate =	47.25	MMBtu/hr								
Natural Gas Limitation =	414	MMCF/yr								
No. 2 Fuel Oil Limitation =	682,347	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	0	gal/yr, and	0	% 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 =	439,425	gal/yr, and	0.75	% sulfur	1.00	% ash	0.200	% chlorine,	0.010	% lead
Diesel Fuel Limitation - Generator < 600 HP =	0	gal/yr,and								
Diesel Fuel Limitation - Generator > 600 HP =	0	gal/yr	0	% sulfur						

PM Dryer/Mixer Limitation =	0.306	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.149	lb/ton of asphalt production
SO2 Dryer/Mixer Limitation =	0.058	lb/ton of asphalt production
NOx Dryer/Mixer Limitation =	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 =	33.30	tons/yr
HCl Limitation =	13.2	lb/kgal

Limited/Controlled Emissions

	Limited/Controlled Potential Emissions (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**CO_2e**	**Total HAPs**	**Worst Case HAP**	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	14.06	11.21	11.21	24.22	20.70	1.14	17.38	25,020.07	3.48	2.90	(hydrogen chloride)
Dryer/Mixer (Process)	91.95	39.08	44.75	17.40	16.50	9.60	39.00	9,975.60	3.20	0.93	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	22.20	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case	0.07	0.12	0.12	2.58	0.73	0.01	0.18	1,016.16	2.58E-03	2.21E-03	(hexane)
Diesel-Fired Generator < 600 HF	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HF	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions*	**92.02**	**39.20**	**44.87**	**49.00**	**21.42**	**9.61**	**39.18**	**26,036.23**	**3.48**	**2.90**	(hydrogen chloride)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	0.33	0.33	0.33	0	0	5.14	0.86	0	0.09	0.03	(formaldehyde)
Material Storage Piles	0.93	0.33	0.33	0	0	0	0	0	0	0	
Material Processing and Handling	1.94	0.92	0.14	0	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	7.98	2.79	2.79	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	21.30	5.43	0.54	0	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	33.30	0	0	8.69	3.00	(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	**32.48**	**9.80**	**4.13**	**0.00**	**0.00**	**38.44**	**0.86**	**0.00**	**8.77**	**3.00**	(xylenes)
Totals Limited/Controlled Emissions	**124.50**	**49.00**	**49.00**	**49.00**	**21.42**	**48.05**	**40.05**	**26,036.23**	**12.25**	**3.00**	(xylenes)

negl = negligible
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	47.25	MMBtu/hr								
Natural Gas Limitation =	414	MMCF/yr								
No. 2 Fuel Oil Limitation =	682,347	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	0	gal/yr, and	0	% 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 =	439,425	gal/yr, and	0.75	% sulfur	1.00	% ash	0.200	% chlorine,	0.010	% lead

Limited Emissions

	Emission Factor (units)							Limited Potential to Emit (tons/yr)							
Criteria Pollutant	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)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	64.0	0.39	0.68	0.00	0.00	0.000	0.000	14.06	**14.06**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	51	1.57	1.13	0.00	0.00	0.000	0.000	11.21	**11.21**
SO2	0.6	71.0	0.0	0.0	0.00	0.00	110.3	0.12	24.22	0.00	0.00	0.000	0.000	24.22	**24.22**
NOx	100	20.0	20.0	55.0	13.0	15.0	19.0	20.70	6.82	0.00	0.00	0.00	0.00	4.17	**20.70**
VOC	5.5	0.20	0.20	0.28	1.0	1.10	1.0	1.14	0.07	0.00	0.00	0.00	0.00	0.22	**1.14**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	17.38	1.71	0.00	0.00	0.00	0.00	1.10	**17.38**
Hazardous Air Pollutant															
HCl							13.2							2.90	**2.90**
Antimony			5.25E-03	5.25E-03			negl			0.00E+00	0.00E+00			negl	**0.0E+00**
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	4.1E-05	1.91E-04	0.00E+00	0.00E+00			2.42E-02	**2.4E-02**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	2.5E-06	1.43E-04	0.00E+00	0.00E+00			negl	**1.4E-04**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	2.3E-04	1.43E-04	0.00E+00	0.00E+00			2.04E-03	**2.0E-03**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	2.9E-04	1.43E-04	0.00E+00	0.00E+00			4.39E-03	**4.4E-03**
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	1.7E-05		0.00E+00	0.00E+00			4.61E-05	**4.6E-05**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	1.0E-04	4.30E-04	0.00E+00	0.00E+00			1.2E-01	**0.12**
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	7.9E-05	2.87E-04	0.00E+00	0.00E+00			1.49E-02	**0.01**
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				5.4E-05	1.43E-04	0.00E+00	0.00E+00				**1.4E-04**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	4.3E-04	1.43E-04	0.00E+00	0.00E+00			2.42E-03	**0.002**
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	5.0E-06	7.16E-04	0.00E+00	0.00E+00			negl	**7.2E-04**
1.1.1-Trichloroethane			2.36E-04	2.36E-04						0.00E+00	0.00E+00				**0.0E+00**
1,3-Butadiene															**0.0E+00**
Acetaldehyde															**0.0E+00**
Acrolein															**0.0E+00**
Benzene	2.1E-03		2.14E-04	2.14E-04				4.3E-04		0.00E+00	0.00E+00				**4.3E-04**
Bis(2-ethylhexyl)phthalate							2.2E-03							4.83E-04	**4.8E-04**
Dichlorobenzene	1.2E-03						8.0E-07	2.5E-04						1.76E-07	**2.5E-04**
Ethylbenzene			6.36E-05	6.36E-05						0.00E+00	0.00E+00				**0.0E+00**
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				1.6E-02	2.08E-02	0.00E+00	0.00E+00				**0.021**
Hexane	1.8E+00							0.37							**0.373**
Phenol							2.4E-03							5.27E-04	**5.3E-04**
Toluene	3.4E-03		6.20E-03	6.20E-03				7.0E-04		0.00E+00	0.00E+00				**7.0E-04**
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		0.00E+00	0.00E+00			8.59E-03	**8.6E-03**
Polycyclic Organic Matter		3.30E-03							1.13E-03						**1.1E-03**
Xylene			1.09E-04	1.09E-04						0.00E+00	0.00E+00				**0.0E+00**
							Total HAPs	**0.39**	**0.02**	**0.00**	**0.00**	**0**	**0**	**3.08**	**3.48**

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

*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.

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 the
Dryer/Mixer Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	47.25	MMBtu/hr								
Natural Gas Limitation =	414	MMCF/yr								
No. 2 Fuel Oil Limitation =	682,347	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	0	gal/yr, and	0	% 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 =	439,425	gal/yr, and	0.75	% sulfur	1.00	% ash	0.200	% chlorine,	0.010	% lead

Limited Emissions

	Emission Factor (units)							Global Warming Potentials (GWP)		
CO2e Fraction	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	2.20	0.26	0.19	0.53	0.90	0.90	0.18	Nitrous oxide	N_2O	310

	Limited Potential to Emit (tons/yr)							
CO2e Fraction	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)	**CO2e for Worst Case Fuel* (tons/yr)**
CO2	24,868.09	7,676.88	0.00	0.00	0.00	0.00	4,838.98	**25,020.07**
CH4	0.52	0.31	0.00	0.00	0.00	0.00	0.20	
N2O	0.46	0.09	0.00	0.00	0.00	0.00	0.04	
Total	24,869.07	7,677.28	0.00	0.00	0.00	0.00	4,839.22	
CO2e Equivalent Emissions (tons/yr)	25,020.07	7,710.92	0.00	0.00	0.00	0.00	4,855.36	

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 1.3-8
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	325	ton/hr
Annual Asphalt Production Limitation =	600,000	ton/yr
PM Dryer/Mixer Limitation =	0.306	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.149	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

	Emission Factor or Limitation (lb/ton) Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Limited/Controlled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	0.306	0.306	0.306	91.9	91.9	91.9	**91.9**
PM10*	0.130	0.130	0.130	39.1	39.1	39.1	**39.1**
PM2.5*	0.149	0.149	0.149	44.7	44.7	44.7	**44.7**
SO2**	0.003	0.011	0.058	1.0	3.3	17.4	**17.4**
NOx**	0.026	0.055	0.055	7.8	16.5	16.5	**16.5**
VOC**	0.032	0.032	0.032	9.6	9.6	9.6	**9.6**
CO***	0.130	0.130	0.130	39.0	39.0	39.0	**39.0**
Hazardous Air Pollutant							
HCl			2.10E-04			0.06	**0.06**
Antimony	1.80E-07	1.80E-07	1.80E-07	5.40E-05	5.40E-05	5.40E-05	**5.40E-05**
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.68E-04	1.68E-04	1.68E-04	**1.68E-04**
Beryllium	negl	negl	negl	negl	negl	negl	**0.00E+00**
Cadmium	4.10E-07	4.10E-07	4.10E-07	1.23E-04	1.23E-04	1.23E-04	**1.23E-04**
Chromium	5.50E-06	5.50E-06	5.50E-06	1.65E-03	1.65E-03	1.65E-03	**1.65E-03**
Cobalt	2.60E-08	2.60E-08	2.60E-08	7.80E-06	7.80E-06	7.80E-06	**7.80E-06**
Lead	6.20E-07	1.50E-05	1.50E-05	1.86E-04	4.50E-03	4.50E-03	**4.50E-03**
Manganese	7.70E-06	7.70E-06	7.70E-06	2.31E-03	2.31E-03	2.31E-03	**2.31E-03**
Mercury	2.40E-07	2.60E-06	2.60E-06	7.20E-05	7.80E-04	7.80E-04	**7.80E-04**
Nickel	6.30E-05	6.30E-05	6.30E-05	1.89E-02	1.89E-02	1.89E-02	**1.89E-02**
Selenium	3.50E-07	3.50E-07	3.50E-07	1.05E-04	1.05E-04	1.05E-04	**1.05E-04**
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	1.20E-02	1.20E-02	1.20E-02	**1.20E-02**
Acetaldehyde			1.30E-03			0.39	**0.39**
Acrolein			2.60E-05			7.80E-03	**7.80E-03**
Benzene	3.90E-04	3.90E-04	3.90E-04	0.12	0.12	0.12	**0.12**
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.07	0.07	0.07	**0.07**
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	0.93	0.93	0.93	**0.93**
Hexane	9.20E-04	9.20E-04	9.20E-04	0.28	0.28	0.28	**0.28**
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.01	0.01	0.01	**0.01**
MEK			2.00E-05			0.01	**0.01**
Propionaldehyde			1.30E-04			0.04	**0.04**
Quinone			1.60E-04			0.05	**0.05**
Toluene	1.50E-04	2.90E-03	2.90E-03	0.05	0.87	0.87	**0.87**
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.06	0.26	0.26	**0.26**
Xylene	2.00E-04	2.00E-04	2.00E-04	0.06	0.06	0.06	**0.06**
						Total HAPs	**3.20**
						Worst Single HAP	**0.93** **(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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions from the aggregate drying/mixing

Maximum Hourly Asphalt Production =	325	ton/hr
Annual Asphalt Production Limitation =	600,000	ton/yr

	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)				Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Global Warming Potentials (GWP)	Natural Gas	No. 2 Fuel Oil	Waste Oil	**CO2e for Worst Case Fuel (tons/yr)**
CO2	33	33	33	1	9,900.00	9,900.00	9,900.00	
CH4	0.0120	0.0120	0.0120	21	3.60	3.60	3.60	
N2O				310	0	0	0	
				Total	9,903.60	9,903.60	9,903.60	**9,975.60**
				CO2e Equivalent Emissions (tons/yr)	9,975.60	9,975.60	9,975.60	

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 N20 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 anticipatec 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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	60,000	ton/yr	1.50	% sulfur
Limited Annual Steel Slag Usage =	600,000	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	22.20
Steel Slag**	0.0014	0.42

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
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Paul H. Rohe Company, Inc.
Source Location: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	1.16	MMBtu/hr		
Natural Gas Usage =	0	MMCF/yr		
No. 2 Fuel Oil Usage =	72,583	gal/yr, and	0.50	% sulfur

Unlimited/Uncontrolled Emissions

	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
	Hot Oil Heater		Hot Oil Heater		
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	0.000	0.073	**0.07**
PM10/PM2.5	7.6	3.3	0.000	0.120	**0.12**
SO2	0.6	71.0	0.000	2.577	**2.58**
NOx	100	20.0	0.000	0.726	**0.73**
VOC	5.5	0.20	0.000	0.007	**0.01**
CO	84	5.0	0.000	0.181	**0.18**
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	0.0E+00	2.03E-05	**2.0E-05**
Beryllium	1.2E-05	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Cadmium	1.1E-03	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Chromium	1.4E-03	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Cobalt	8.4E-05		0.0E+00		**0.0E+00**
Lead	5.0E-04	1.3E-03	0.0E+00	4.57E-05	**4.6E-05**
Manganese	3.8E-04	8.4E-04	0.0E+00	3.05E-05	**3.0E-05**
Mercury	2.6E-04	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Nickel	2.1E-03	4.2E-04	0.0E+00	1.52E-05	**1.5E-05**
Selenium	2.4E-05	2.1E-03	0.0E+00	7.62E-05	**7.6E-05**
Benzene	2.1E-03		0.0E+00		**0.0E+00**
Dichlorobenzene	1.2E-03		0.0E+00		**0.0E+00**
Ethylbenzene					**0**
Formaldehyde	7.5E-02	6.10E-02	0.0E+00	2.21E-03	**0.002**
Hexane	1.8E+00		0.00		**0.000**
Phenol					**0**
Toluene	3.4E-03		0.0E+00		**0.0E+00**
Total PAH Haps	negl		negl		**0**
Polycyclic Organic Matter		3.30E-03		1.20E-04	**1.2E-04**
		Total HAPs =	**0.0E+00**	**2.6E-03**	**0.003**
		Worst Single HAP =	**0.0E+00**	**2.2E-03**	**2.2E-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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	1.16	MMBtu/hr		
Natural Gas Usage =	0	MMCF/yr		
No. 2 Fuel Oil Usage =	72,583	gal/yr,	0.50	% sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Natural Gas (lb/MMCF)	Emission Factor (units) No. 2 Fuel Oil (lb/kgal)	Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr)	Unlimited/Uncontrolled Potential to Emit (tons/yr) No. 2 Fuel Oil (tons/yr)
CO2	120,161.84	22,501.41	1	0.00	816.61
CH4	2.49	0.91	21	0.000	3.31E-02
N2O	2.20	0.26	310	0.000	9.44E-03
			Total	0.00	816.65

Worse Case CO2e Emissions (tons/yr)
820.23

CO2e Equivalent Emissions (tons/yr)	0.00	820.23

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	1.16	MMBtu/hr
Natural Gas Usage =	0	MMCF/yr, and
No. 2 Fuel Oil Usage =	72,583	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	0.00E+00	0.001	**0.001**
CO	8.90E-06	0.0012	0.000	0.044	**0.044**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	0.00	1,016.16	**1,016.16**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	0.00E+00	1.27E-04	**1.27E-04**
Acenaphthene		5.30E-07		1.92E-05	**1.92E-05**
Acenaphthylene		2.00E-07		7.26E-06	**7.26E-06**
Anthracene		1.80E-07		6.53E-06	**6.53E-06**
Benzo(b)fluoranthene		1.00E-07		3.63E-06	**3.63E-06**
Fluoranthene		4.40E-08		1.60E-06	**1.60E-06**
Fluorene		3.20E-08		1.16E-06	**1.16E-06**
Naphthalene		1.70E-05		6.17E-04	**6.17E-04**
Phenanthrene		4.90E-06		1.78E-04	**1.78E-04**
Pyrene		3.20E-08		1.16E-06	**1.16E-06**
				Total HAPs	**9.62E-04**
				Worst Single HAP	**6.17E-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 N20 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 - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0
Limited Hours Operated per Year	0
Limited Throughput (hp-hr/yr)	0
Limited Diesel Fuel Usage (gal/yr)	0

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[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, 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]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]	1.28E-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	0.00E+00	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]The 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.

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (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[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	0.00	0.000	0.000

[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, 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]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.

[6]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Limited 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 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 ga/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
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0
Limited Hours Operated per Year	0
Limited Throughput (hp-hr/yr)	0
Limited Diesel Fuel Usage (gal/yr)	0

Sulfur Content (S) of Fuel (% by weight) 0.00

	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) * 1/10^6 (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) * 1/10^6 (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) * 1/10^6 (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 ga/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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	-0.5	
Annual Asphalt Production Limitation =	600,000	tons/yr

	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
Pollutant	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Total**
Total PM*	5.2E-04	5.9E-04	NA	0.16	0.18	NA	**0.33**
Organic PM	3.4E-04	2.5E-04	NA	0.10	0.076	NA	**0.18**
TOC	0.004	0.012	0.001	1.25	3.66	0.330	**5.2**
CO	0.001	0.001	3.5E-04	0.40	0.354	0.106	**0.86**

NA = Not Applicable (no AP-42 Emission Factor)

PM/HAPs	**0.007**	**0.009**	**0**	**0.016**
VOC/HAPs	**0.018**	**0.046**	**0.005**	**0.070**
non-VOC/HAPs	**9.6E-05**	**9.9E-06**	**2.5E-05**	**1.3E-04**
non-VOC/non-HAPs	**0.09**	**0.05**	**0.02**	**0.17**

Total VOCs	**1.17**	**3.66**	**0.3**	**5.1**
Total HAPs	**0.03**	**0.06**	**0.005**	**0.09**
			Worst Single HAP	**0.027 (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)::
Total PM/PM10 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.2: Limited Emissions Summary
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
Reviewer: Hannah L. Desrosiers

Organic Particulate-Based Compounds (Table 11.1-15)

					Speciation Profile		Limited Potential to Emit (tons/yr)			
Pollutant	**CASRN**	**Category**	**HAP Type**	**Source**	**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%	2.7E-04	3.6E-04	NA	6.2E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	2.9E-05	1.1E-05	NA	3.9E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	7.2E-05	9.9E-05	NA	1.7E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.9E-05	4.3E-05	NA	6.2E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	7.8E-06	0	NA	7.8E-06
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	2.3E-06	0	NA	2.3E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.9E-06	0	NA	1.9E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	2.4E-06	0	NA	2.4E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	8.0E-06	7.2E-06	NA	1.5E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	1.1E-04	1.6E-04	NA	2.7E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	3.8E-07	0	NA	3.8E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	5.1E-05	1.1E-04	NA	1.7E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	7.9E-04	7.7E-04	NA	1.6E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	4.8E-07	0	NA	4.8E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	2.4E-03	4.0E-03	NA	0.006
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	1.3E-03	1.4E-03	NA	2.7E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	2.3E-05	2.3E-05	NA	4.5E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	8.3E-04	1.4E-03	NA	2.2E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.5E-04	3.4E-04	NA	4.9E-04
Total PAH HAPs							**0.006**	**0.009**	**NA**	**0.015**
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	1.2E-03	0	0	1.2E-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)

					Speciation Profile		Limited Potential to Emit (tons/yr)			
Pollutant	**CASRN**	**Category**	**HAP Type**	**Source**	**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%	**1.17**	**3.66**	**0.31**	**5.14**
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	8.1E-02	9.5E-03	2.1E-02	0.112
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	5.7E-04	2.0E-03	1.5E-04	0.003
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	8.9E-03	4.0E-02	2.3E-03	0.051
Total non-VOC/non-HAPS					7.30%	1.40%	**0.091**	**0.051**	**0.024**	**0.17**
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	6.5E-04	1.2E-03	1.7E-04	2.0E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	1.2E-04	1.8E-04	3.2E-05	3.3E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	6.1E-04	1.4E-03	1.6E-04	2.2E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.6E-04	5.8E-04	4.3E-05	7.9E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	2.6E-06	1.5E-04	6.9E-07	1.5E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.9E-04	8.4E-04	5.0E-05	1.1E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	1.4E-03	0	3.6E-04	1.7E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	3.5E-03	1.4E-03	9.2E-04	0.006
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	1.1E-03	2.5E-02	2.9E-04	0.027
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.9E-03	3.7E-03	5.0E-04	0.006
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	2.2E-05	1.1E-05	5.9E-06	4.0E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	9.9E-06	0	9.9E-06
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	9.1E-05	2.0E-04	2.4E-05	3.1E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	9.6E-05	0	2.5E-05	1.2E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	2.6E-03	2.3E-03	6.9E-04	0.006
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	1.6E-05	0	4.3E-06	2.1E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	5.1E-03	7.3E-03	1.4E-03	0.014
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	1.0E-03	2.1E-03	2.6E-04	3.3E-03
Total volatile organic HAPs					1.50%	1.30%	**0.019**	**0.048**	**0.005**	**0.071**

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

Abbreviations
TOC = Total Organic Compounds
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
MTBE = Methyl tert butyl ether

Appendix A.2: Limited Emissions Summary
Material Storage Piles

Company Name: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = 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	0.50	0.275	0.096
Limestone	1.6	1.85	1.00	0.338	0.118
RAP	0.5	0.58	1.00	0.106	0.037
Gravel	1.6	1.85	0.50	0.169	0.059
Shingles	0.5	0.58	0.05	0.005	0.002
Slag	3.8	4.40	0.05	0.040	0.014
			Totals	**0.93**	**0.33**

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.
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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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.

Ef = k*(0.0032)*[(U/5)^1.3 / (M/2)^1.4]

where: Ef =	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)
Ef (PM) =	2.27E-03	lb PM/ton of material handled
Ef (PM10) =	1.07E-03	lb PM10/ton of material handled
Ef (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Annual Asphalt Production Limitation =	600,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	570,000	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	0.65	0.31	0.05
Front-end loader dumping of materials into feeder bins	0.65	0.31	0.05
Conveyor dropping material into dryer/mixer or batch tower	0.65	0.31	0.05
Total (tons/yr)	**1.94**	**0.92**	**0.14**

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 additivies
*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	7.13	2.48
Conveying	0.003	0.0011	0.86	0.31
Limited Potential to Emit (tons/yr) =			**7.98**	**2.79**

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	600,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	570,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	30,000	tons/yr
No. 2 Fuel Oil Limitation =	682,347	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	2.5E+04	1.0E+06	300	0.057	1445.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	2.5E+04	4.3E+05	300	0.057	1445.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	8.3E+02	4.0E+04	300	0.057	47.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	8.3E+02	1.0E+04	300	0.057	47.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	7.2E+01	3.2E+03	300	0.057	4.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	7.2E+01	8.6E+02	300	0.057	4.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	1.4E+05	2.6E+06	300	0.057	7711.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	1.4E+05	2.0E+06	300	0.057	7711.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	2.5E+04	1.0E+06	300	0.057	1420.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	2.5E+04	4.3E+05	300	0.057	1420.5
	Total				**3.7E+05**	**7.6E+06**			**2.1E+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)	4.41	1.12	0.11	2.90	0.74	0.07	1.45	0.37	0.04
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	4.41	1.12	0.11	2.90	0.74	0.07	1.45	0.37	0.04
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.144	0.037	0.00	0.095	0.024	2.4E-03	0.047	0.012	1.2E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.144	0.037	0.00	0.095	0.024	2.4E-03	0.047	0.012	1.2E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.012	0.003	3.2E-04	0.008	0.002	2.1E-04	0.004	0.001	1.0E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.012	0.003	3.2E-04	0.008	0.002	2.1E-04	0.004	0.001	1.0E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	23.50	5.99	0.60	15.45	3.94	0.39	7.73	1.97	0.20
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	23.50	5.99	0.60	15.45	3.94	0.39	7.73	1.97	0.20
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	4.33	1.10	0.11	2.85	0.73	0.07	1.42	0.36	0.04
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	4.33	1.10	0.11	2.85	0.73	0.07	1.42	0.36	0.04
	Totals	**64.78**	**16.51**	**1.65**	**42.59**	**10.86**	**1.09**	**21.30**	**5.43**	**0.54**

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 =	600,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	570,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	30,000	tons/yr
No. 2 Fuel Oil Limitation =	682,347	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	2.5E+04	1.0E+06	300	0.057	1445.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	2.5E+04	4.3E+05	300	0.057	1445.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	8.3E+02	4.0E+04	300	0.057	47.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	8.3E+02	1.0E+04	300	0.057	47.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	7.2E+01	3.2E+03	300	0.057	4.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	7.2E+01	8.6E+02	300	0.057	4.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.4E+05	2.6E+06	300	0.057	7711.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.4E+05	2.0E+06	300	0.057	7711.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	2.5E+04	1.0E+06	300	0.057	1420.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	2.5E+04	4.3E+05	300	0.057	1420.5
	Total				**3.7E+05**	**7.6E+06**			**2.1E+04**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.057	miles/trip

Unmitigated Emission Factor, Ef = [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 = Ubitiguous 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, Eext = E * [1 - (p/4N)]
Mitigated Emission Factor, Eext = Ef * [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, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	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)	0.11	0.02	0.01	0.10	0.02	0.00	0.05	0.01	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.11	0.02	0.01	0.10	0.02	0.00	0.05	0.01	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.004	0.001	1.7E-04	0.003	0.001	1.6E-04	0.002	3.2E-04	7.9E-05
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.004	0.001	1.7E-04	0.003	0.001	1.6E-04	0.002	3.2E-04	7.9E-05
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	3.0E-04	6.1E-05	1.5E-05	2.8E-04	5.6E-05	1.4E-05	1.4E-04	2.8E-05	6.8E-06
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	3.0E-04	6.1E-05	1.5E-05	2.8E-04	5.6E-05	1.4E-05	1.4E-04	2.8E-05	6.8E-06
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.57	0.11	0.03	0.52	0.10	0.03	0.26	0.05	0.01
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.57	0.11	0.03	0.52	0.10	0.03	0.26	0.05	0.01
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.11	0.02	0.01	0.10	0.02	0.00	0.05	0.01	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.11	0.02	0.01	0.10	0.02	0.00	0.05	0.01	0.00
	Totals	**1.58**	**0.32**	**0.08**	**1.45**	**0.29**	**0.07**	**0.72**	**0.14**	**0.04**

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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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 liquic binder for cold mix asphalt production

Limited VOC Emissions from the Sum of the Liquid Binders = 33.30 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%	35.05	33.30	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	47.57	33.30	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	133.20	33.30	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	71.77	33.30	2.155
Other asphalt with solvent binder	25.9%	2.5%	1,332.02	33.30	40.0
			Worst Case Limited PTE of VOC =	**33.30**	

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) =	**8.69**	
Limited PTE of Single HAP (tons/yr) =	**3.00**	**Xylenes**

Hazardous Air Pollutant (HAP) Content (% by weight) For Various Petroleum Solvents

		Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
Volatile Organic HAP	CAS#	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: Paul H. Rohe Company, Inc.
Source Address: Portable
Permit Number: F031-31702-03258
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:

Gasoline Throughput =	0	gallons/day
=	0.0	kgal/yr

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.

Mitchell E. Daniels Jr.
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: Daniel T Crago
Paul H Rohe Company, Inc.
11641 Mosteller Road
Cincinnati, OH 45241

DATE: September 7, 2012

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

SUBJECT: Final Decision
FESOP Renewal
031-31702-03258

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
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Commissioner

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September 7, 2012

TO: Greensburg Decatur County Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Paul H Rohe Company, Inc.
Permit Number: 031-31702-03258

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 9/7/2012 Paul H Rohe Co, Inc 031-31702-03258 final			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Daniel T Crago Paul H Rohe Co, Inc 11641 Mosteller Rd Cincinnati OH 45241 (Source CAATS) via confirmed delivery									
2		Greensburg Decatur Co Public Library 1110 East Main Greensburg IN 47240 *(Library)*									
3		Decatur County Commissioners 150 Courthouse Square Greensburg IN 47240 *(Local Official)*									
4		Decatur County Health Department 801 N. Lincoln St Greensburg IN 47240-1397 *(Health Department)*									
5		Mr. Leonard Rohls 8504 North County Road 300 West Batesville IN 47006 *(Affected Party)*									
6		Melanie Brassell 606 Nelsons Parkway, P.O. Box 465 Wakarusa IN 46573 *(Affected Party)*									
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